LAWS, RULES AND REGULATIONS

RELATING TO

COMMUNICABLE AND OTHER REPORTABLE DISEASES

BY

THE KANSAS STATE BOARD OF HEALTH

Revised and Adopted

SEPTEMBER 23, 1943

Second Edition
Revised November, 1945

In Co-operation With

THE KANSAS MEDICAL SOCIETY
THE AMERICAN PUBLIC HEALTH ASSOCIATION
and
THE UNITED STATES PUBLIC HEALTH SERVICE

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OFFICIAL NOTICE

In accordance with the provision of General Statutes 1935, section 65-117 to section 65-129 of the state of Kansas, these rules and regulations relating to the control of contagious and other reportable diseases have been revised and adopted by the Kansas State Board of Health September 23, 1943, as shown by the minutes of said Board, and said rules and regulations have been duly published in the official state paper.

F. C. Beelman, M. D.,
Secretary and Executive Officer, Kansas State Board of Health.

Dated March 1, 1944.

Second Edition, with further revisions, *November, 1945.*

FOREWORD

In the preparation of this issue of the Laws, Rules and Regulations pertaining to the Control of Communicable Diseases the general procedures outlined by the committee of the American Public Health Association for the Control of Contagious Diseases have been followed. The Board realized the value of uniform rules and regulations adopted by states in their effort to control communicable diseases.

In this pamphlet can be found complete, up-to-date information on the administrative control of the communicable diseases for which reporting is required by law in Kansas. Many diseases, not previously listed, have been added. Each disease is briefly described with regard to its clinical and laboratory recognition, the etiological agent, the source of infection, susceptibility, immunity and prevalence. The terms used are first defined.

Responsibility for the reporting and control of communicable diseases is an important duty of every physician. With the return of soldiers from all parts of the globe, many diseases, entirely foreign to Kansas, will be diagnosed and reported. The possibility of introduction and spread of those that are of a serious, contagious nature to a non-immune population must be recognized. Complete protection of the public against such hazards will be found in the alert, well-informed physician in every community.

For those physicians who assume the obligations and duties of health officers, instructions have been included as to the procedures necessary to fulfill the responsibilities of that office.

Many deaths occur each year in Kansas from communicable diseases. The majority of these deaths occur among children and can be prevented through early diagnosis, adequate medical and hospital services, and prompt and efficient control measures to prevent spread to others. We appreciate the assistance of the Committee on Child Welfare of the Kansas Medical Society and of Kansas Health Officers in the preparation of this pamphlet.

F. C. BEELMAN, *M. D.*
Secretary and Executive Officer, Kansas State Board of Health.

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Chapter I

DUTIES OF THE HEALTH OFFICER

Under the provisions of the statutes of the State of Kansas, the Kansas State Board of Health is authorized, required and empowered to have general supervision of the interests relating to the health and lives of the people of the state; to make sanitary investigations regarding causes of diseases and deaths; to establish quarantine; to prescribe regulations for the prevention of the introduction of epidemic diseases into the state; to collect reports from local boards of health; and to prescribe regulations which shall be adopted and carried into effect by local boards of health.

The county commissioners of each county in the state are the local board of health, and shall appoint a physician as health officer for the board. Upon his appointment to the office he must take the oath of office and deposit his bond with the county clerk. Failure to comply with this procedure disqualifies him to act as health officer, and he cannot be legally paid by the county commissioners for any services he may perform until he qualifies as required by the statutes.

It is one of the duties of every health officer to forward to the State Board of Health, at the end of each week, all returns of communicable diseases received by him from physicians, householders and other persons in his jurisdiction. Before mailing these cards he must record same in the books kept for this purpose. These records are valuable as aids in settling disputes and for statistical purposes. All official reports, books and papers of the health officer are the property of the state, and all property in the hands of such health officer must be turned over at the expiration of his term of office to his successor in office. Many physicians upon accepting the appointment to this office, fail to obtain these records as required by their oath of office, and therefore are liable at any time to forfeiture of their bond for neglect of duty.

No physician should consider accepting the position of health officer without carefully reading the laws, rules and regulations pertaining to his duties, as when he accepts, the State Board of Health will expect him to perform all duties that are required to protect the health of the people of the county and state.

Whenever any physician is called to treat a case of notifiable disease, he must report same immediately, to the local board of health, and if the disease requires placarding must placard the premises. These placards must be on red or yellow cloth or cardboard, not less than twelve inches square, with the name of the disease printed thereon in large characters, and are to be fastened on the front door or other conspicuous part of the building wherein the sickness prevails. These cards must be printed and furnished to all physicians in the county by the county board of health, and the health officer must see that each physician in his county is supplied at all times with a sufficient number of quarantine cards for all diseases requiring placarding.

In the statutes for Kansas, the health officer's duties are specifically stated in regard to investigation of reported cases of communicable diseases, inspection

of schools and school buildings, sanitary investigations and such other duties as may be required of him by his local board or the State Board of Health for the protection of the health of the citizens of the state. Provision is also made for the employment by the county commissioners of a county health nurse and other personnel needed to adequately protect the health of the people of the county.

Franked report cards for the report of notifiable diseases are furnished by the state department to the health officers for distribution to the physicians of the county. Franked envelopes are furnished also to the health officer for his report to the State Board of Health.

If no reports are received by the local health officer during the week, the "no report" card should be mailed so as to reach Topeka on Monday morning. A report is sent to the Surgeon-General, USPHS, at 4 p. m. Monday afternoon of each week by the State Board of Health. If the health officer fails to get his report to Topeka on time, the county is credited with being delinquent for the week.

The medical profession is expected to take the lead in the reporting of contagious diseases. Morbidity reports received long after the occurrence of the onset of a contagious disease are of little use in preventing other cases or in stamping out an epidemic. Every epidemic has its starting point from some delayed report or unrecognized case, with consequent delay in the instituting of preventive measures applicable to the disease reported. Many cases of contagious diseases occur where no physician is in attendance. In such cases, if the householder does not report the case to the proper health authority, it is the duty of any citizen of the state who is aware of the case to report his suspicions to the health officer for his information and investigation. Public welfare demands that every person shall, to a certain degree, be a deputy sanitary inspector and health officer.

Within natural limitations a community may determine its own death rate, for public health is a purchasable commodity. All state health departments in the United States have come to realize that the full-time county and city health departments are the only efficient means of preventing much needless sickness and death. Records of counties now operating under the full-time system in Kansas show, as compared to years these counties were under part-time health officers, a marked decrease in the number of cases and deaths from preventable diseases. The citizens of every county should take steps to obtain efficient health protection.

L. 1927, ch. 240, 1. Local health officer to take oath of office and give bond; notice to State Board of Health of election and qualifications; duties of local health officer; authority for appointment of county nurse and other health department employees, compensation; penalty for neglect or failure to perform duties; removal from office. That the county health officer in each county and the health officer of each local board of health throughout the state, immediately after his election, shall take the same oath of office prescribed by law for county officers, and shall give bond of five hundred dollars, conditioned for the faithful performance of his duty, to keep an accurate record of all the transactions of his office, and to turn over to his successor in office or to the county or local board of health selecting him, on the expiration of his term of office, all records, documents and other articles belonging to the

office, and to faithfully account to said board and to the county and state all moneys coming into his hands by virtue of his office. And he shall further notify the State Board of Health of the fact of his election and qualifications, as herein provided for, and give his post-office address. He shall receive and distribute without delay in the county for which he is appointed all forms from the State Board of Health to the rightful persons, all returns from physicians, assessors and local boards to the said State Board of Health, and shall keep an accurate record of all of the transactions of his office, and shall turn over all records and documents kept by him, as herein provided, and all other articles belonging to the office to his successor in office, or to the county or local board electing him, on the expiration of his term of office. He shall upon the opening of the fall term of school, make a sanitary inspection of each school building and grounds, and shall make such additional inspections thereof as are necessary for the protection of the public health of the students of the school. He shall make a personal investigation of each case of smallpox, diphtheria, typhoid fever, scarlet fever, acute anterior poliomyelitis (infantile paralysis), epidemic cerebrospinal meningitis and such other acute infectious, contagious or communicable diseases as may be required, and shall use all known measures to prevent their spread, and shall perform such other duties as this act, his local board, or the State Board of Health may require of him: *Provided, however,* That such inspection or investigation shall not be made in any case which has been reported to the proper health authorities as required by law, and where quarantine regulations have not been infringed upon. He shall receive for his services such reasonable compensation as his board may allow, and with the approval of his local board of health may employ a skilled professional nurse, whenever he finds it necessary to have such assistance, and the local board of health for the county shall allow such nurse the sum of five dollars per day and her necessary transportation and incidental expenses while so employed, upon the approval of the same by the county health officer. The local board of health, whenever they deem it necessary for the protection of the public health, may employ additional personnel. All of said several sums allowed shall be paid out of the county treasury; and for any failure or neglect of said health officer to perform any of the duties prescribed in this act he may be removed from office by the State Board of Health, as well as in the manner prescribed by the preceding section. And in addition to removal from office as provided herein, for any failure or neglect to perform any of the duties prescribed by this act, said county or local health officer shall be deemed guilty of a misdemeanor and, upon conviction, be fined not less than ten nor more than one hundred dollars for each and every offense.

65-119. Duty of local board of health or health officer having knowledge of any infectious or contagious disease or death from such disease; epidemic; schools to be closed; prohibition of all public assemblages; vaccination in case of smallpox. 633. Any municipal or county board of health or health officer having knowledge of any infectious or contagious disease, or of a death from such disease, within their jurisdiction, shall immediately exercise and maintain a supervision over such case or cases during their continuance, seeing that all such cases are properly cared for and that the provisions of this act as to isolation, restriction of communication, placarding, quarantine and

disinfection are duly enforced. The local board of health or health officer shall communicate without delay all information as to existing conditions to the State Board of Health. Said health officer will confer personally, if practicable, otherwise by letter, with the physician in attendance upon the case, as to its future management and control, and with the authorities of the place as to their duties in the premises. Should the disease show a tendency to become epidemic, the public and private schools must be closed, and, in extreme cases, church services suspended and public assemblages of people at shows, circuses, theaters, fairs or other gatherings prohibited. In case of smallpox, a general and thorough vaccination should be recommended and insisted upon. (L. 1901, ch. 285, sec. 3; Feb. 15.)

Chapter II

AUTHORIZATION OF STATE BOARD OF HEALTH TO MAKE RULES AND REGULATIONS

Authorizing the State Board of Health to make rules in relation to the control of infectious, contagious and communicable diseases. (Ch. 205, Session Laws of 1917, Senate Bill No. 135.) (Sections 65-128, 65-129, Revised Statutes of 1923.)

AN ACT for the protection of the public health, to authorize the State Board of Health to make and prescribe rules, regulations and procedures in relation to the control of infectious, contagious or communicable diseases dangerous to the public health and to provide certain penalties for violation thereof.

Be it enacted by the Legislature of the State of Kansas:

SECTION 1. For the better protection of the public health and for the control of communicable diseases, the State Board of Health shall designate such diseases as are infectious, contagious or communicable in their nature and the State Board of Health is herewith authorized to make and prescribe rules, regulations and procedures for the isolation and quarantine of such diseases and persons afflicted with or exposed to such diseases as may be necessary to prevent the spread and dissemination of diseases dangerous to the public health. Such rules, regulations and procedures shall be published in the official state paper, and when so published shall be in full force and effect.

SECTION 2. Any person violating, refusing or neglecting to obey any of the rules and regulations or procedures made by the State Board of Health for the prevention, suppression and control of dangerous, contagious, infectious or communicable diseases, or who shall leave any posthouse or isolation hospital or quarantined house or place without the consent of the proper health officer having jurisdiction, or who evades or breaks quarantine or knowingly conceals a case of contagious, infectious or communicable disease, or who removes, destroys or tears down any quarantine card, cloth or notice posted by the attending physician or by the health officer or by direction of a proper health officer, shall be guilty of a misdemeanor, and upon conviction thereof shall be subject to a fine of not less than $25 or more than $200 or to imprisonment in the county jail not to exceed ninety days, or to both fine and imprisonment.

SECTION 3. This act shall be in force and effect upon its publication in the official state paper.

Approved February 27, 1917.

Published in official state paper February 28, 1917.

Chapter III

POWERS OF STATE, COUNTY, AND LOCAL BOARDS OF HEALTH

65-126. Power of State Board of Health to quarantine city, township or county where diseases mentioned show tendency to become epidemic and local health officers neglect to quarantine. 640. Whenever cholera, smallpox, diphtheria, scarlet fever, epidemic cerebrospinal meningitis or other infectious or contagious diseases show a tendency to become epidemic, and the local health authorities neglect to properly isolate and quarantine such diseases, the State Board of Health or its executive officer may quarantine any city, township or county in which any of these diseases may show a tendency to become epidemic. (L. 1901, ch. 285, sec. 10; Feb. 15.)

65-201. County commissioners of counties to act as local boards of health; election of physician as local health officer; term of office; local board to supersede boards established by municipal regulations; all local boards of health to be governed by this act. 614. The county commissioners of the several counties of this state shall act as local boards of health for their respective counties. Each local board thus created shall elect a physician, preference being given to adepts in sanitary science, who shall be ex officio a member of said local board and the health officer of the same. He shall hold his office during the pleasure of the board, but may be removed for just cause at any regular meeting of the same by a majority of the members voting therefor, on which motion he shall not vote. The local boards of health hereby created shall not supersede or in any way interfere with such boards established by municipal regulations in any of the counties of this state; but all local boards of health of this state, created by this act, or existing by authority of municipal law, shall be governed by the provisions of this act. (L. 1885, ch. 129, sec. 7; March 17.)

SECTION 1. Section 65-204 of the General Statutes of 1935 is hereby amended to read as follows: Sec. 65-204. Boards of county commissioners in any county of the state may levy a special tax upon all taxable property in their respective counties, not in excess of one-half mill on the dollar of assessed valuation of such property, and the proceeds thereof shall be placed into a separate fund designated as "the county health fund," which fund is hereby created, and shall be used only to defray the cost of: (1) For the assisting in the carrying out of the health laws, rules and regulations of the state within such county; (2) paying the salary of the county health officer; (3) the employment of additional personnel to assist the county health officer and other health authorities within such counties: *Provided,* That such tax will be in addition to all other taxes authorized or limited by law: *Provided further,* That the provisions of this act shall not abrogate or amend any other existing health laws, or laws incidental thereto.

SEC. 2. Section 65-204 of the General Statutes of 1935 is hereby repealed.

SEC. 3. This act shall take effect and be in force from and after its publication in the statute book.

CHAPTER 223

Session Laws of 1943

An Act relating to public health and sanitation and authorizing the creation and maintenance of a joint board of health by agreement of the governing bodies of the cities and counties concerned.

Be it enacted by the Legislature of the State of Kansas:

Section 1. Whenever it shall be determined that the public health and sanitation of any city or county may be best promoted by the creation of a joint board of health for any two or more cities, counties or city and county the governing bodies of such municipalities may so declare by resolution and may, by agreement with each other, establish a joint board of health with the same powers, duties, and limitations as are now or hereafter may be provided by law for the creation and conduct of boards of health to act severally in such municipalities. Upon the creation of any such joint board of health all the jurisdiction, powers and duties now conferred by law upon any local, municipal or county board of health shall be withdrawn from such local, municipal or county board of health and conferred upon the joint board of health.

Section 2. It shall be the duty of the joint board of health to elect a treasurer, who shall be a member of such board, for such term as may be agreed upon under the authority of Section 1 of this act. The treasurer shall hold office for the term for which he is elected and until his successor is elected and qualified, and shall give bond to be approved by the governing bodies of the contracting municipalities for the safekeeping and due disbursement of all funds that may come into his hands. All money provided for health and sanitation purposes by the contracting municipalities shall, when collected, be paid over to the treasurer of said board in an amount not exceeding that budgeted by the municipalities for such purposes. The joint board of health shall have the exclusive control over the expenditure of all moneys paid to the credit of its treasurer for health and sanitation purposes, and the treasurer shall receive and pay out all the moneys under the control of said board as ordered by it.

Section 3. The joint board of health, during the month of January of each year, shall file with the governing body of each contracting municipality a report of its activities and a statement of all receipts and expenditures during the preceding year.

Section 4. The contracting municipalities may levy taxes for health and sanitation purposes as may be provided by law: *Provided,* That the amounts to be budgeted for such purposes by each contracting municipality shall be fixed by agreement after taking into consideration the population of each any other factors which would necessarily increase or diminish the costs to be borne by it in the absence of agreement to establish such joint board of health.

Section 5. If the governing body of any city or county which has entered into an agreement to establish a joint board of health shall adopt a resolution declaring its intention to withdraw from such agreement and joint board of

health, and shall give written notice thereof on or before July 15, of any fiscal year to each municipality which is a party to the agreement, such city or county may withdraw from such joint board of health and agreement at the end of such fiscal year.

SECTION 6. Any money remaining in the hands of the treasurer of the joint board of health, upon its dissolution by the contracting parties, shall be repaid to the respective treasurers of the contracting municipalities in the proportion in which such municipalities contributed during the last fiscal year.

(Published in official state paper—Topeka Daily Capital—March 29, 1943.)

Chapter IV

RESPONSIBILITY TO REPORT DISEASE

65-117. Physician to give notice to nearest board of health or health officer of any person sick with or who has died of any disease mentioned or other dangerous disease; red or yellow card or cloth to be fastened upon front, etc., of building; cloth or card maintained until premises disinfected. 631. Whenever any physician shall know or have reason to believe that any person whom he is called to visit, or any person sick within his knowledge without the care of a physician, is sick with or has died of cholera, smallpox, scarlet fever, diphtheria, epidemic cerebrospinal meningitis, or any disease dangerous to the public health, he shall immediately give notice thereof to the nearest board of health or health officer, and, if the case occurs in his own practice, shall at once cause a red or yellow cloth or card not less than twelve inches square, with the name of the disease written or printed thereon in large characters, to be fastened upon the front door or other conspicuous part of the building wherein the sickness prevails; such cloth or card to be maintained during the existence of the disease, and until such time as the health officer, or, in his absence, the attending physician, acting by his authority and approval, is satisfied that the premises have been thoroughly disinfected and are fit for reoccupation. (L. 1901, ch. 285, sec. 1; Feb. 15.)

65-118. Householder to give notice to nearest board of health or health officer and cause house to be placarded. 632. Whenever any householder shall know that any of his family is sick with or has died of smallpox, cholera, scarlet fever, diphtheria, epidemic cerebrospinal meningitis, or any disease dangerous to the public health, he shall immediately give notice thereof to the nearest board of health or health officer, and shall cause the house to be placarded as prescribed in Section 1. (L. 1901, ch. 285, sec. 2; Feb. 15.)

65-125. Physician to notify health officer when premises ready for disinfection; disinfected under direction of health officer. 639. It shall be the duty of every physician in attendance upon any person afflicted with any contagious or infectious disease designated in this act to notify the proper health officer when said premises are ready for disinfection, so that the same may be properly disinfected under the direction of said health officer or some other person under his authority. (L. 1901, ch. 285, sec. 9; Feb. 15.)

NOTE.—In addition to diseases mentioned, householders are required to also report chickenpox, infantile paralysis, epidemic influenza, whooping cough, mumps, measles and typhoid fever.

Chapter V

REGULATIONS ON REPORTING DISEASE

11,103—2. Reports forwarded to local health authority. Inasmuch as the control and abatement of infectious, contagious or communicable diseases depends upon the knowldge of the existence or location of cases of such diseases by the local and state boards of health, it is hereby ruled that the diseases named in chapters X, XI, and XII shall be declared to be notifiable diseases, and the occurrence of cases of such diseases shall be reported as herein provided. Hereafter each and every physician or other practitioner of the healing art practicing in the state of Kansas who treats or examines any person suffering from or afflicted with, or suspected to be suffering from or afflicted with, any one of the notifiable diseases named above shall immediately report such cases of notifiable disease in writing to the local health authority having jurisdiction. Said reports shall be forwarded either by mail or by special messenger and shall give the following information:

I. The date of the onset of such disease.
II. The name of the disease or suspected disease.
III. The name, age, sex, color, nativity, occupation, address, and school attended or place of employment of patient.
IV. The number of adults and of children in the household.
V. Source or probable source of infection or origin or probable origin of the disease.
VI. The name and address of the reporting physician.

Provided, That if the disease is, or is suspected to be smallpox, the report shall, in addition, show whether the disease is of the mild or virulent type, and if the disease is, or is suspected to be, smallpox or typhoid fever, whether the patient has ever been successfully vaccinated and if the patient has been successfully vaccinated the number of times and dates or approximate dates of such vaccination; and if the disease is, or is suspectd to be, cholera, diphtheria, plague, scarlet fever, smallpox, or yellow fever, the physician shall, in addition to the written report, give immediate notice of the case to the local health authority in the most expeditious manner available; and if the disease is, or is suspected to be, tuberculosis, typhoid fever, paratyphoid fever, scarlet fever, diphtheria, or septic sore throat, the report shall also show whether the patient has been, or any member of the household in which the patient resides, is engaged or employed in the handling of milk for sale or preliminary to sale.

11,104—3. Duties of Physician. The requirements of the preceding paragraph shall be applicable to physicians attending patients ill with any of the notifiable diseases in hospitals, asylums, or other institutions, public or private: *Provided,* That the superintendent or other person in charge of such hospital, asylum, or other institution in which the sick are cared for, may with the

written consent of the local health officer (or board of health) having jurisdiction, report in the place of the attending physician or physicians the cases of notifiable diseases and disabilities occurring in or admitted to said hospital, asylum, or other institution in the same manner as that prescribed for physicians.

11,105.—4. Report of existence of disease to local health officer. Whenever a person is known or is suspected to be afflicted with a notifiable disease, or whenever the eyes of an infant under two weeks of age become reddened, inflamed, or swollen, or contain an unnatural discharge, and no physician is in attendance, an immediate report of the existence of the case shall be made to the local health officer by the midwife, nurse, attendant, householder or other person in charge of the patient.

11,106—5. Blanks supplied by State Board of Health. The written reports of cases of notifiable diseases as required of physicians by this rule shall be made upon blanks supplied for the purpose, through the local health authorities, by the State Board of Health.

11,107—6. Local health officers forward reports of notifiable diseases to State Board of Health. Local health officers or boards of health shall, within seven (7) days after the receipt by them of reports of cases of the notifiable diseases, forward by mail to the State Board of Health the original written reports made by physicians, after first having transcribed the information given in the respective reports in a book or other form of record for the permanent files of the local health office. On each report thus forwarded the local health officer shall state whether the case to which the report pertains was visited or otherwise investigated by the local health officer or by a representative of the local health officer and whether and what measures were taken to prevent the spread of the disease or the occurrence of additional cases.

11,108—7. Making reports of epidemics. Whenever there occurs within the jurisdiction of a local health officer or board of health an epidemic of a notifiable disease, the local health officer or board of health shall, when requested by the State Board of Health or its executive officer within thirty days after the epidemic shall have subsided, make a report to the State Board of Health of the number of cases occurring in the epidemic, and the means by which the disease was spread.

Chapter VI
EXCLUSION FROM SCHOOLS

65-122. Children afflicted with infectious or contagious dangerous disease not to be admitted into school; persons not to allow such children to attend school until danger from contagion passed. 636. No person afflicted with any infectious or contagious disease dangerous to the public health shall be admitted into any public or private school. No parent, guardian, tutor, or other person having charge or control of children, whose residence is infected with smallpox, cholera, scarlet fever, diphtheria, epidemic cerebrospinal meningitis, or other infectious or contagious disease dangerous to the public health, shall allow or permit them to attend any public or private school during the continuance of such infection, or until the premises have been thoroughly disinfected and all danger from contagion is passed. (L. 1901, ch. 285, sec. 6, Feb. 15.)

72-1109. Pupil affected with contagious disease excluded from common school; not allowed to remain in schoolroom. 124. No pupil affected with any contagious disease shall be allowed to attend any common school or remain in any schoolroom while so infected. (L. 1876, ch. 122, art. 5, sec. 5; April 7.)

11,334. Exclusion from school. Whenever the school principal or teacher in any private, parochial or public school has reason to suspect that any pupil is suffering from or has been exposed to any infectious, contagious or communicable diseases required by the rules and regulations of the State Board of Health to be excluded from school, such principal or teacher shall send such child home, and any pupil so excluded shall not be permitted to attend school again until such pupil shall present a certificate from the health officer or from a legally qualified physician acting by the consent of the health officer, stating that the child is not suffering from any infectious, contagious or communicable disease.

I. Within the meaning of this rule, principals or teachers shall exclude any child suffering from or exhibiting any of the following symptoms: (1) Sore throat or tonsilitis, (2) Any eruption of the skin, or rash, (3) Any catarrhal symptoms accompanied by fever, or fever alone, (4) Severe cough or cold.

11,340. Duties of parents. Parents, guardians, or other persons having custody of any child or children, shall not permit such child or children if afflicted with or exposed to any infectious, contagious or communicable disease required by the State Board of Health regulations to be excluded from school, to attend any school.

11,341. Closing of schools. Whenever in the judgment of the State Board of Health (or its executive officer), or any local, county or city board of health or health officer, it is advisable to close the school because of the prevalence of any infectious, contagious or communicable disease or diseases, he or they shall serve written notice upon the board of school directors (board of education) or the responsible officials in any private, parochial or Sunday School in the same district in which such disease or diseases prevail, directing them to close all schools immediately, nor shall any such school be reopened until permission is given by the proper health officials.

Chapter VII

PUBLIC FUNERALS PROHIBITED

65-123. Public funeral not allowed where death occurs from either of diseases mentioned or other dangerous disease. 637. No public funeral shall be allowed, either at the house or church, where death occurs from smallpox, cholera, scarlet fever, diphtheria, epidemic cerebrospinal meningitis, or other infectious disease dangerous to the public health. (L. 1901, ch. 285, sec. 7; Feb. 15.)

Chapter VIII

ISOLATION AND DISINFECTION MEASURES RECOMMENDED FOR THE HOME

Immediate *isolation* of a patient having a communicable disease is of benefit to the patient, as it reduces the likelihood of additional and complicating infections, as well as a protection to others. Quiet, freedom from excitement and fatigue of visits, and complete rest are important factors in the medical and nursing management of such patients and directly contribute to recovery. The patient should be placed in a well-ventilated room, and when possible, with a bath adjoining; rugs and drapes should be removed; a supply of paper napkins provided for secretions, and a paper sack in which to place them after use—these to be burned regularly; a disinfectant solution such as lysol or alcohol, followed by soap and water should be provided for washing the hands after every contact with the patient or things which have been used by him; a disinfectant solution for articles and for stools and urine should be available. Washable gowns should be worn by the attendant and should be removed just prior to leaving the room.

CONCURRENT DISINFECTION

If the spread of contagion from the patient ill with the disease, is to be prevented, measures of disinfection must be carried out persistently from the onset of the first symptoms until the termination of the disease.

Concurrent disinfection or disinfection during the course of the disease, should be carried out as follows:

Normal and abnormal *discharges from the eyes, ears, nose, throat, skin lesions and glands* should be disinfected by being collected on bits of cotton, paper or cloth and burned at once. In handling these and other infected materials, the attendant should avoid touching or allowing any object, which is not to be immediately disinfected, to touch the infected surfaces. For example, towels and bedclothes should be gathered up with the infected side in, and handled by the relatively noninfected corners and edges. They should not be put down until deposited in the boiler or other vessel in which they are to be disinfected.

The hair and skin of the patient or attendant may be cleansed by washing with soap and water, and the water used to bathe the patient, after use, should be boiled or disinfected by adding three tablespoonfuls of freshly opened chloride of lime or other disinfectant of equal strength.

Disinfection of the *bowel discharges* should be carried out by adding three tablespoonfuls of freshly opened chloride of lime to a liquid stool and stirring the mixture until all parts of the stool have been thoroughly mixed with the disinfecting agent. This mixture should be allowed to stand, protected from flies, for thirty minutes before being discharged into a sewer or privy vault.

Solid stools should have one pint of water added and be thoroughly stirred until all lumps are broken and then treated as above.

Disinfection of *bladder discharges* shall be carried out by stirring three tablespoonfuls of freshly opened chloride of lime into each passage and allowing this mixture to stand thirty minutes before being discharged into a sewer or privy vault. Bed pans and urinals must be thoroughly cleansed after each time used, rinsed out and left containing a small amount of dry chloride of lime. Sufficient chloride of lime should be left in the receptacle so that the chloride will be repugnant for flies. These receptacles should also be kept screened away from flies.

All persons, on leaving the room, should wash their hands thoroughly with soap and water and if possible rinse their hands with a disinfecting solution. Washable gowns should be worn by the nurse and should be removed just prior to leaving the room.

Bedclothes, pillowcases, sheets, nightgowns, towels, wash cloths or any other cloth or clothing of any kind may be disinfected by being boiled with soap and water for fifteen minutes, before leaving the premises or the quarantined area.

A wash boiler or tub one-third full of cold water should be kept in the sick room. All cloth or clothing used by the patient should immediately be placed in this tub. Once a day the tub should be taken to the stove and allowed to boil for fifteen minutes. Clothes so treated may be hung out to dry. Prompt moistening and boiling is much better than immersion in any disinfectant.

Dishes, glassware, knives, forks, spoons, or any utensils used in feeding the patient, should be disinfected promptly by being washed and boiled. Dishes used by the patient should not be used by other members of the family but should be set aside for the use of the patient only. Food from the sick room should never be eaten by anyone, but should be collected and boiled or burned at once.

Thermometers, rectal tubes, douche nozzles, etc., should not be removed from the sick room until the termination of the case. They should be washed clean with soap and water after each use and should be kept immersed in denatured alcohol or other disinfectant when not in use.

TERMINAL DISINFECTION

Smallpox, scarlet fever, diphtheria, epidemic cerebrospinal meningitis, acute anterior poliomyelitis and tuberculosis are the diseases that require terminal disinfection under the regulations passed by the Kansas State Board of Health.

It is the duty of the health officer, just prior to release of a case of communicable disease requiring terminal disinfection, to instruct the householder how the premises must be disinfected.

At the termination of the quarantine the premises occupied by the patient should be thoroughly disinfected in accordance with the following directions: The disinfection should not be attempted unless the day is clear and sunny. All bed linen, night garments and other fabrics that will not be injured by boiling should be boiled. All other articles, such as mattresses, rugs, bed and other furniture should be placed out of doors in direct sunlight. This should be done early in the morning. At noon they should be turned over or moved

so that all surfaces not exposed to the morning sun will be exposed to the afternoon sun, thus exposing all surfaces to the sun for one-half day.

After the room has been cleared, the floor and all woodwork should be thoroughly scrubbed with soap and water, and then mopped with a solution of ten ounces (twenty tablespoonfuls) of formalin to one gallon of water. The room should then be closed and allowed to remain closed until late in the afternoon, when it may be opened up, aired out, and the furniture replaced. The furniture should be mopped off with the above solution before being replaced.

Gaseous fumigation is not required or recommended, and if fumigation is used at the request of the people it should in no instance replace the measures required by the above regulation as the disinfection must be carried out in all cases of communicable diseases listed as requiring terminal disinfection.

Chapter IX

STATE LABORATORY SERVICE

Section I

LABORATORY DIRECTORY

1. Communicable Disease Specimens.

(a) Specimens which are to be examined for evidence of communicable diseases, with the exception of animal heads for rabies, should be sent, transportation charges prepaid to:

Division of Public Health Laboratories,
Kansas State Board of Health,
National Reserve Bldg.,
Topeka, Kansas.

(b) Instructions for the collection and shipment of specimens are given either on the back of the data card, on the specimen bottle or on a separate slip accompanying the container. Specimen outfits are furnished upon request by the Division of Public Health Laboratories.

2. Rabies Specimens.

(a) *The heads of animals* which are to be examined for rabies should be packed in ice in accordance with the traffic regulations of the Railway Express Agency, and shipped by prepaid express to the State Veterinarian, Kansas State College, Manhattan, Kansas.

SHIPPING INSTRUCTIONS

Paragraph 9, Railway Express Agency's Traffic Rules, General Circular No. 10, Dogs, or other animals. Bodies, heads, or parts thereof, by express to laboratories.

Rules and regulations governing the shipment of the heads of dogs and other animals by express to laboratories of state boards of health or other laboratories.

(1) Agents must not accept for transportation the head of a dog, or any other animal, sent to the State Board of Health for rabies examination unless it shall have been prepared for shipment as hereinafter provided.

(2) The head of a dog or other animal so shipped must be placed in a tin or other metal container, which will not permit the leakage of fluids; such a container shall then be placed in a second wooden or metal container with ice packed around it; such outside container must be constructed so that it will not permit the leakage of the ice water.

(3) All such packages must be labeled: "Caution—This package contains the head of a dog (or name of another animal) suspected of having died of hydrophobia."

(4) Such shipments tendered on Saturday, which cannot reach destination early enough for delivery on that day and would therefore remain in the express office over Sunday, must be refused, and shipper requested to pack in ice and hold until Monday, so that they can be delivered without delay at destination.

(5) Require prepayment of charges on shipments of this kind.

(6) Bodies of dead animals or parts thereof: Various State Boards of Health have decided that the custom of shipping bodies of dead animals (especially dogs) to state laboratories or other public or private laboratories is unnecessary, and a menace to the health of the people, and regulations have been established that whenever analysis of dead animal tissue becomes necessary, the brain, spinal cord, stomach, liver or other part, organ or tissue affected, must be removed from the body of the animal before delivering to the express company and packed, iced and labeled, as provided above for "Head of Dogs or Other Animals," in paragraph 1, (b), (c) and (d). Charges must be prepaid. Agents at all points are directed to comply with these instructions and to refuse shipments as above described unless packed as provided herein.

All heads must be addressed to the State Veterinarian, Kansas State College, Manhattan, Kansas.

(b) Further instructions for the packing and shipment of rabies specimens may be obtained from the local express agent, and must be carefully followed to insure the specimen reaching its destination in a satisfactory condition for examination.

3. Water and Sewage Specimens.

(a) The bacteriological analysis of water is now made in two laboratories operated by the Kansas State Board of Health. The following paragraphs will explain the provisions for analyzing water in each laboratory.

(1) Division of Sanitation, Lawrence, Kansas.

(a) The Kansas State Board of Health maintains a fee-supported water and sewage laboratory at the University of Kansas, for the purpose of furnishing laboratory supervision of the public water supplies of the state. A fee to cover the cost of the service is charged for the analysis of samples from sources other than public water supplies. Specimens should be collected in containers furnished by the Division of Sanitation and shipped prepaid to:

Division of Sanitation,
Kansas State Board of Health,
University of Kansas,
Lawrence, Kansas.

(b) Samples of sewage and sewage-polluted water are collected and analyzed only as a part of investigational work done under the direct supervision of the Division of Sanitation.

(2) Division of Public Health Laboratories, Topeka, Kansas.

(a) If a health officer, a member of his staff, or a bona fide public health worker, wishes to collect samples of questionable

water supplies, they may be sent to the Division of Public Health Laboratories, Topeka, where they will be analyzed without charge.

(b) Samples of water collected by private individuals must be sent to the Division of Sanitation at Lawrence, where a charge will be made.

(c) The laboratories are not required to accept samples unless they are collected in containers furnished by the State Board of Health.

4. Food Specimens.

(a) *Chemical.*

(1) Only official specimens submitted by state, county or city authorities are accepted for examination at:

State Food Laboratory,
University of Kansas,
Lawrence, Kansas

State Food Laboratory,
Kansas State College,
Manhattan, Kansas.

(2) Specimens should be officially sealed at the time they are collected and shipped prepaid.

(b) *Bacteriological.*

All specimens for bacteriological examination in connection with food poisoning outbreaks should be sent to:

Division of Public Health Laboratories,
Kansas State Board of Health,
National Reserve Bldg.,
Topeka, Kansas.

5. Post-morten Specimens for Poison Analysis.

(a) Only official specimens submitted by state, county or city authorities are accepted for examination at:

State Food Laboratory,
University of Kansas,
Lawrence, Kansas.

(b) Specimens should be officially sealed, packed in ice and shipped by prepaid express.

6. Drug Specimens.

(a) Only official specimens submitted by state, county or city authorities are accepted for examination at:

State Drug Laboratory,
University of Kansas,
Lawrence, Kansas.

(b) Specimens should be officially sealed and shipped prepaid.

Section II

PUBLIC HEALTH LABORATORY—ADMINISTRATION RULES

1. Work Authorized. The work of the Public Health Laboratory shall be limited to those bacteriological, serological and parasitological examinations which are directly related to the detection and control of communicable diseases and to the manufacture of such chemical and biological products used in the prevention of communicable diseases as may be authorized by the Kansas State Board of Health.
2. Specimens, From Whom Accepted. The Division of Public Health Laboratories shall only accept specimens from health officials, regularly licensed physicians of the state of Kansas or their representatives.
3. Serodiagnostic Tests for Syphilis. All serological tests for the diagnosis of syphilis are performed free of charge on any individual or groups of individuals as a case finding procedure.
4. Laboratory Reports.
   (a) *To whom made.* Reports on communicable disease examinations made by the Division of Public Health Laboratories shall be sent only to the physicians who submitted the specimen, the health officer of the county or city in which the patient resides and to the Division of Communicable Diseases of the Kansas State Board of Health, except as hereinafter provided.
   (b) *How made.* Reports of the results of the examinations made by the Division of Public Health Laboratories shall always be sent by mail. When requested, additional reports will be made by telephone or telegraph at the expense of the person making the request.
   (c) *Reports to others than those specified above.* Reports on examinations shall not be issued by the Division of Public Health Laboratories to any person, organization or institution other than those specified in paragraph 4a without the written consent of the physician who submitted the specimen.

Section III

Collection and Shipment of Specimens

1. Specimen Outfits.
   (a) *Where obtained.* Specimen outfits may be obtained:
      1. By written request addressed to the:

         Division of Public Health Laboratories,
         Kansas State Board of Health,
         National Reserve Bldg.,
         Topeka, Kansas.

      2. The following table will be useful in determining which outfit should be used:

Disease.	Type of examination.	Specimen.	Outfit.
Diphtheria	Culture	Throat \ Nose / Culture	Diphtheria Outfit
Gonorrhea	Microscopic	Smear	G. C. Outfit
	Culture	Exudate	G. C. Culture Outfit
Vincent's Angina	Microscopic	Smear	Vincent's Outfit
Malaria	Microscopic	Blood Smear	Malaria Outfit
Tuberculosis	Microscopic	Sputa	T. B. Outfit
	Culture		
	Animal Inoculation		
Typhoid	Culture	Blood	Blood Culture Outfit
Paratyphoid A		Feces and Urine	Feces and Urine Outfit
Paratyphoid B	Agglutination	Blood (5 cc.)	Agglutination Outfit
Tularemia	Agglutination	Blood (5 cc.)	Agglutination Outfit
Brucella	Agglutination	Blood (5 cc.)	Agglutination Outfit
	Culture	Blood (5 cc.)	Brucella Culture Outfit
Typhus Rocky Mt. Spotted Fever	Agglutination	Blood (5 cc.)	Agglutination Outfit
Dysentery Bacillary	Culture	Feces	Feces Outfit
Amebic	Microscopic	Feces	Feces Outfit
Parasites and Ova	Microscopic	Feces	
Meningococcus Meningitis	Microscopic and Culture	Spinal Fluid	
Pneumonia	Typing Mouse Inoculation	Sputa	Pneumo Typing Outfit
Hemolytic streptococci	Culture	Throat swab	Diphtheria Outfit
Whooping Cough	Culture	Cough plate	Cough plate
Food Infections	Culture	Food	
Syphilis	Microscopic	Chancre fluid	Darkfield Outfit
	Serodiagnostic Tests	Blood or spinal fluid	Wassermann Outfit
	Bacteriological	Milk—Food	
	Bacteriological	Water	Water Outfit

(b) *Use of outfits recommended.* Specimen outfits furnished by the State Board of Health for use in the collection and shipment of specimens should always be used in submitting specimens to the Division of Public Health Laboratories. The Division of Public Health Laboratories does not assume any responsibility for the accuracy of the results obtained on specimens which are collected and submitted in containers which they have not furnished for the purpose. Sputum specimens for tuberculosis examination and stool specimens for typhoid fever or other enteric examination will not be accepted unless submitted in containers furnished by the laboratory.

(c) *Use of proper outfit.* The use of the proper type of specimen outfit for each kind of specimen cannot be too strongly emphasized. Each outfit is designed to give best results with the type of specimen for which it is intended, and while one type of outfit may appear similar to that furnished for another type of specimen, it may be entirely unsatisfactory.

(d) *Misuse of outfits.* Specimen outfits are distributed by the State Board of Health solely for use in sending specimens to the Division of Public Health Laboratories. Their use in submitting specimens to private laboratories or for any purpose other than that specified constitutes a misuse of state property.

2. Identification of Specimens.

(a) *Information required.* Specimens submitted to the Division of Public Health Laboratories for examination shall be accompanied by the following clear and legible information:

1. Physician's name and address.
2. Patient's name, sex, age, color and county of residence.
3. Kind of examination desired.
4. Date of collection of specimen.
5. Whether for diagnosis or control.

The Division of Public Health Laboratories may refuse to examine specimens which are not accompanied by the legible information specified above.

(b) *Data blanks.* Data blanks which provide spaces for the information specified in paragraph 2a are included in each specimen outfit and a separate data blank should be filled out in ink for each specimen submitted. These data blanks are kept on file as a record of receiving the specimen and results of laboratory examinations.

(c) *Special information.* A description of the history of the case, submitted with the specimen, may inspire the bateriologist to make special tests which would not be made routinely.

3. Shipment of Specimens.

(a) *Transportation charges.* Transportation charges on specimens sent to the Division of Public Health Laboratories shall be fully prepaid by the sender. The Division of Public Health Laboratories may refuse to accept specimens on which transportation is not fully prepaid.

(b) *Postage rates.* The Post Office Department has ruled that when only the information needed for the identification of the specimen (specified

in paragraph 2a) is enclosed with the specimen, it does not change the postage rate chargeable thereon. Such specimens may be mailed third or fourth class rates, depending on the weight of the packages. When a telegraphic report is requested or any other communication is placed in the container, letter postage (first class) is required.

Section IV

INTERPRETATION OF REPORTS—GENERAL

1. Significance of Laboratory Reports.

(a) *The laboratory report is not a diagnosis.* The laboratory report is one of the factors which should usually be considered in making a diagnosis, but, with very few exceptions, it does not constitute a diagnosis by itself. The diagnosis is made by the attending physician from a careful consideration of the clinical findings, the history of the case and the laboratory report. If he will use the laboratory as a precision instrument, in the same manner that he uses his stethoscope, it will give him valuable assistance in making his diagnosis, but the physician who depends entirely on the laboratory for his diagnosis errs as greatly as the one who does not use the laboratory at all.

(b) *Negative reports not always conclusive.* A single negative report does not always rule out the possibility of the condition suspected. It should be supported by several carefully collected specimens, and when the results do not agree with the clinical findings it should be remembered that the laboratory is not necessarily at fault. It may mean that:

1. The specimen was not properly collected or is not a representative specimen.
2. Delay in shipping the specimen has resulted in deterioration of the specimen or death of the organisms which may have been present when it was collected.
3. The specimen was not collected at the proper stage of the disease. In some conditions, specimens collected in the early stages of the disease give negative results while in others the reverse is true. The instructions on the back of the report blanks should be consulted for information on this point.
4. The organism or substance searched for is either absent, or present in such minute amounts that it was not detected. An extreme example may be cited from experiences with clinical cases of pulmonary tuberculosis where, in a few instances, more than one hundred daily sputum specimens have been examined before the tubercle bacillus was found.

BIOLOGICALS AND DRUGS

Requisitions may be sent to the Division of Laboratories, Kansas State Board of Health, for tuberculin, typhoid fever vaccine, diphtheria toxoid, smallpox vaccine, and poliomyelitis convalescent serum.

Typhoid vaccine will be furnished, free of charge, to physicians for immunization of persons against typhoid fever.

Diphtheria toxoid for immunization against diphtheria will be furnished, free of charge, to county boards of health, school boards, county medical societies and individual physicians.

Smallpox vaccine will be supplied under the same condition as applies to the distribution of toxoid.

Poliomyelitis convalescent serum will be furnished to physicians at the cost of processing.

Immune serum globulin will be supplied for prevention or modification of measles.

Pertussis vaccine for immunization against whooping cough will be furnished.

A standard solution of one percent silver nitrate in boxes containing six wax ampules to be used in the eyes of the newborn for the prevention of ophthalmia neonatorum, as required under Sec. 65-153b, G. S. 1935, can also be obtained without charge upon request.

A list of drugs and the regulations upon which they are furnished free for the treatment of venereal diseases can be obtained by writing the Division of Venereal Disease Control, Kansas State Board of Health.

All biological products deteriorate rapidly when exposed to excessive temperatures. Upon receipt, they should be placed in a refrigerator until they are to be used for administration to patients. See that all vaccines are kept in good condition. No vaccines, which have become out-dated, should be administered to any person, but should be returned to this division immediately for replacement.

Chapter X

REPORTABLE COMMUNICABLE DISEASES

A. Definition of Terms

1. Carrier.—A person who, without symptoms of a communicable disease, harbors and disseminates the specific micro-organisms. As distinct from a carrier, the term "infected person" is used to mean a person in whose tissues the etiological agent of a communicable disease is lodged and produces symptoms.

2. Cleaning.—This term signifies the removal by scrubbing and washing, as with hot water, soap, and washing soda, of organic matter on which and in which bacteria may find favorable conditions for prolonging life and virulence; also the removal by the same means of bacteria adherent to surfaces.

3. Contact.—A "contact" is any person or animal known to have been sufficiently near an infected person or animal to have been presumably exposed to transfer of infectious material directly, or by articles freshly soiled with such material.

4. Delousing.—By delousing is meant the process by which a person and his personal apparel are treated so that neither the adults nor the eggs of *Pediculus corporis* or *Pediculus capitis* survive.

5. Disinfection.—By this is meant the destruction of the vitality of pathogenic micro-organisms by chemical or physical means.

When the word "concurrent" is used as qualifying disinfection, it indicates the application of disinfection immediately after the discharge of infectious material from the body of an infected person, or after the soiling of articles with such infectious discharges, all personal contacts with such discharges or articles being prevented prior to their disinfection.

When the word "terminal" is used as qualifying disinfection, it indicates the process of rendering the personal clothing and immediate physical environment of the patient free from the possibility of conveying the infection to others, at the time when the patient is no longer a source of infection.

6. Disinfesting.—By disinfesting is meant any process, such as the use of dry or moist heat, gaseous agents, poisoned food, trapping, etc., by which insects and animals known to be capable of conveying or transmitting infection may be destroyed.

7. Education in personal cleanliness.—This phrase is intended to include all the various means available to impress upon all members of the community, young and old, and especially when communicable disease is prevalent or during epidemics, by spoken and printed word, and by illustration and suggestion, the necessity of:

(1) Keeping the body clean by sufficiently frequent soap and water baths.

(2) Washing hands in soap and water after voiding bowels or bladder and always before eating.

(3) Keeping hands and unclean articles, or articles which have been used for toilet purposes by others, away from mouth, nose, eyes, ears, and genitalia.

(4) Avoiding the use of common or unclean eating, drinking, or toilet articles of any kind, such as towels, handkerchiefs, hairbrushes, drinking cups, pipes, etc.

(5) Avoiding close exposure of persons to spray from the nose and mouth, as in coughing, sneezing, laughing, or talking.

8. Fumigation.—By fumigation is meant a process by which the destruction of insects, as mosquitoes, fleas, bedbugs, and body lice, and animals, as rats, is accomplished by the employment of gaseous agents.

9. Isolation.*—By isolation is meant the separating of persons suffering from a communicable disease, or carriers of the infecting micro-organism, from other persons, in such places and under such conditions as will prevent the direct or indirect conveyance of the infectious agent to susceptible persons.

10. Quarantine.*—By quarantine is meant the limitation of freedom of movement of persons or animals who have been exposed to communicable disease for a period of time equal to the longest usual incubation period of the disease to which they have been exposed.

It is still considered necessary to require strict isolation of the patient for the period of communicability, and quarantine or immunization of contacts in certain diseases, notably smallpox. However, in some other diseases, such as poliomyelitis and encephalitis, isolation of the patient has but little apparent effect in limiting the spread of the disease, and the period of communicability is not known with reasonable accuracy in any given case.

Case-to-case infection is relatively infrequent in these latter two diseases; and yet the patient must be regarded as a potential source of infection and suitable precautions must be taken, even if these barriers to transmission of the disease are but partially effective. Uncertainty as to the exact duration of the period of communicability does not justify neglect of reasonable isolation measures but rather adds to our obligation to educate patients, the family, and the attending physician in the advantages to be had from separating the sick from the well, and in taking precautionary measures voluntarily when the presence of a communicable disease is suspected and before a diagnosis is established, after the official period of isolation is past, and generally during the epidemic prevalence of such diseases in the community.

The five specific objectives of personal cleanliness as defined above (7), if conscientiously attempted, will materially aid in reducing the amount of frequency of infection.

Isolation of a patient with a communicable disease from visitors is often of benefit to the patient by reducing the likelihood of additional and complicating infections, as well as a protection to others; quiet, freedom from excitement

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NOTE.—*In view of the various ambiguous and inaccurate uses to which the words "isolation" and "quarantine" are not infrequently put, it has seemed best to adopt arbitrarily the word "isolation" as describing the limitation put upon the movements of the known sick or "carrier" individual or animal, and the word "quarantine" as describing the limitation put upon exposed or "contact" individuals.

When the term "isolation" is used in connection with such diseases as the common cold, influenza, chickenpox, and mumps, it is not to be understood that the establishment of isolation is, under ordinary circumstances, a necessary or practicable procedure for official requirement or enforcement, but a practice to be instituted under the direction of the attending physician, and its duration to be generally, if not exclusively, at his discretion.

and fatigue of visits, and complete rest are important factors in the medical and nursing management of such patients and directly contribute to recovery.

11. Renovation.—By renovation is meant, in addition to cleansing, such treatment of the walls, floors, and ceilings of rooms or houses as may be necessary to place the premises in a satisfactory sanitary condition.

12. Susceptible.—A "susceptible" is a person or animal who is not known to have become immune to the particular disease in question by natural or artificial process.

13. Virus, filterable.—The term "filterable virus" as defining the etiological agent of certain diseases is used in the sense of a casual agent differentiated from other kinds of infectious agents such as bacteria, protozoa, etc. Many of these filterable viruses can be grown *in vitro* in the presence of the living susceptible cells and such cultures will produce regularly typical diseases in animals and in man. The term "filterable virus" has a significance comparable to that of bacterium, spirochete, or protozoon. The term "filterable virus" is as definite a description of an etiological agent as is the statement that the typhoid bacillus causes typhoid fever. The idea conveyed by the statement that a filterable virus is the etiological agent is that the cause of this disease is known, even though present knowledge does not permit further precision in distinguishing among filterable viruses except by reference to the name of the disease produced by each.

B. Reportable Communicable Diseases

The following named diseases are declared to be infectious, contagious, or communicable diseases, or diseases dangerous to the public health, and as such are reportable to the Kansas State Board of Health.

Actinomycosis

1. *Recognition of the disease.*—A local or general, acute or chronic suppurative process combined with growth of connective tissue, and characterized by the presence in the lesions of vegetations or colonies of the specific micro-organism, identifiable by microscopic examination of discharges from the lesions. It may be confused with pulmonary or generalized tuberculosis.
2. *Etiological agent—Actinomyces hominis* and other species of this genus.
3. *Source of infection.*—Unknown. Possibly in some case of actinomycosis in man, *Actinomyces homisis* previously existed as a saprophyte in the oral cavity (carious teeth, interstices between teeth, and crypts of tonsils).
4. *Mode of transmission.*—Among cattle, principally by grains, grasses, and other cattle fodder, and stable bedding contaminated by discharges from lesions of the disease, infecting abrasions or wounds or oral cavity or body surface. It is not probable that the disease is transmitted from man to man. It may be transmitted from animal to man, but only rarely and indirectly through infection of oral or skin wounds by contaminated materials. The disease sometimes follows extraction of carious or broken teeth, or accidental injury, particularly to the jaws.
5. *Incubation period.*—Undetermined and variable.

6. *Period of communicability.*—As long as open lesions remain, as proved by the presence of the infectious agent on microscopic or cultural tests.
7. *Susceptibility and immunity.*—Susceptibility in cattle and man is general. Acquired immunity does not follow occurrence of the disease in man, and artificial immunity is not practicable.
8. *Prevalence.*—Infrequent among humans.
9. *Methods of control:*
   A. The infected individual, contacts, and environment:
      1. Recognition of the disease and reporting: Clinical symptoms, confirmed by microscopic examination of discharges from the lesions.
      2. Isolation: None, provided the patient is under adequate medical supervision.
      3. Concurrent disinfection: Of discharges from lesions and articles soiled therewith.
      4. Terminal disinfection: By thorough cleansing.
      5. Quarantine: None.
      6. Immunization: None.
      7. Investigation of source of infection: In some cases exposure to infected cattle may be important.
   B. General measures:
      1. Observance of hygiene of oral cavity.
      2. Inspection of meat, with condemnation of carcasses or infected parts of carcasses of infected animals.
      3. Destruction of known animal sources of infection.

Anthrax

1. *Recognition of the disease.*—Two forms occur—external, due to direct inoculation through a cut or abrasion, and internal, caused by ingestion or inhalation of the bacilli or their spores. Following the initial papule and vesicle at the external site of inoculation, an eschar develops and then hard edematous swelling of deeper and adjacent tissues. Freedom from pain is usual. Constitutional symptoms do not parallel the gravity of the lesions. Confirmation by microscopic examination of the lesions and discharges for *B. anthracis.* Internal anthrax resembles intestinal poisoning, toxic pneumonia, or meningitis; the recovery of the bacilli from the blood or spinal fluid confirms the diagnosis.
2. *Etiological agent.*—Anthrax bacillus, *Bacillus anthracis.*
3. *Source of infection.*—Hair, hides, flesh, and feces of infected animals.
4. *Mode of transmission.*—Inoculation as by accidental wound or scratch, inhalation of spores of the infectious agent, ingestion of insufficiently cooked meat, and mechanically by flies and mosquitoes.
5. *Incubation period.*—Within 7 days, usually less than 4.
6. *Period of communicability.*—During the febrile stage of the disease and until lesions have ceased discharging. Infected hair and hides of infected animals may communicate the disease many months after slaughter of the animal and after drying of hide, fur, or hair, unless disinfected.

7. *Susceptibility and immunity.*—Man is not as suspectible as the domestic animals, especially the herbivora, but more so than the carnivora. Immunity may develop following an attack of the disease. Artificial active immunity, widely used for domestic animals, is not appropriate for humans.

8. *Prevalence.*—Rare and sporadic in humans and associated only with the occurrence of the disease in cattle, or with handling hide and hair products from infected animals. In epidemic form in cattle in various foreign countries from time to time.

9. *Methods of Control:*

   A. The infected individual, contacts, and environment:
      1. Recognition of the disease and reporting: Clinical and bacteriological.
      2. Isolation of the infected individual until the lesions have healed.
      3. Concurrent disinfection: Of the discharges from lesions and articles soiled therewith. Spores can be killed only by special measures such as steam under pressure or burning.
      4. Terminal disinfection: Thorough cleaning.
      5. Quarantine: None.
      6. Immunization: None.
      7. Investigation of source of infection: Search for the product of the infected animal, and trace to origin for discovery of disease in sporadic or epidemic form in domestic animals, where it will be found in all but rare instances.

   B. General measures:
      1. Animals ill with disease presumably anthrax should be isolated immediately in the care of a veterinarian. Animals proved to have the disease should be killed and promptly destroyed, preferably by incineration.
      2. Immunization of exposed animals under direction of the United States Department of Agriculture, or state livestock sanitary authority.
      3. Post-mortem examination should be made only by a veterinarian or in the presence of one.
      4. Milk from an infected animal should not be used during the febrile period.
      5. Control and disinfection of effluents and trade wastes and of areas of land polluted by such effluents and wastes from factories or premises, where spore-infected hides or other infected hide and hair products are known to have been worked up into manufactured articles.
      6. Every shipment of raw hides, wool, hair, or bristles from sources which are not known to be free from anthrax infection should be examined by an expert bacteriologist.
      7. A physician should be constantly employed by every company handling raw hides, or such companies should operate under the direct supervision of a medical representative of the health department.

8. Every employee handling raw hides, hair, or bristles who has an abrasion of the skin should immediately report to a physician.
9. Special instruction should be given to all employees handling raw hides in regard to the necessity of personal cleanliness.
10. Tanneries and woolen mills should be provided with proper ventilating apparatus so that dust is promptly removed before reaching the respiratory tract of human beings.
11. Disinfection of hair, wool, and bristles from sources known to be or suspected to be infected, before they are used or sorted.
12. The sale of hide from an animal infected with anthrax should be prohibited. A violation of this regulation should be immediately reported to the appropriate state livestock sanitary authority by telegram, stating the time, place, and purchaser to whom the hide was sold. The report should also be sent to the person purchasing the hide. Carcasses should be disposed of under the supervision of the appropriate livestock sanitary authority. Imported hides are subject to regulations administered by the United States Bureau of Animal Industry. In the event that infection is introduced, the state livestock sanitary authorities have jurisdiction over infected animals and the local or state health authorities have jurisdiction over infected persons.

Ascariasis

1. *Recognition of the disease.*—Frequently, the first sign of infection is the spontaneous passage of an adult worm. The symptomatology is extremely vague except in heavy infections when individuals may exhibit digestive disturbances, abdominal pain, protruding abdomen, exaggerated nervous reflexes, restlessness, and disturbed sleep. The diagnosis usually depends on finding the ova in the stools.
2. *Etiological agent.—Ascaris lumbricoides,* the large intestinal round worm of man.
3. *Source of infection.*—Excreta of infected persons, particularly children, and articles soiled with such excreta in and about houses lacking facilities for sanitary disposal of human wastes.
4. *Mode of transmission.*—By direct or indirect transmission of the embryonated eggs from soil or other polluted material to the mouth. The embryonated eggs hatch in the intestinal canal, penetrate the wall, and reach the lungs by the circulatory system. Most of those which reach the lungs in the blood stream into the air passages, throat, and stomach, and thence to the small intestines. Pollution of soil may be carried by shoes into houses and conveyances and to some distances.
5. *Incubation period.*—The worms reach maturity in the body about two months after infection.
6. *Period of communicability.*—As long as mature female worms live in the intestine. The production of about 200,000 eggs a day permits a wide spread of fecal pollution even when the infection is light.

7. *Susceptibility and immunity.*—Susceptibility is general and even relative resistance to repeated infection cannot be relied upon.
8. *Prevalence.*—High incidence of infection is found where low standards of hygiene, lack of sanitary essentials, poverty, and ignorance create the conditions conducive to intensive pollution of soil in the immediate vicinity of houses. Children of the runabout and early school age are likely to be more frequently and more heavily infected than are older children and adults. Particularly prevalent among the people of the Appalachian plateau.
9. *Methods of control:*
   A. The infected individual, contacts, and environment:
      1. Recognition of the disease by examination of the stools for ova.
      2. Isolation: None.
      3. Concurrent disinfection: Sanitary disposal of feces, and washing hands in soap and water after defecating and before eating.
      4. Terminal disinfection: None.
      5. Quarantine: None.
      6. Immunization: None.
      7. Investigation of source of infection: Individual and environmental sources of infection should be sought for in the persons and premises of the patient's family particularly.
      8. Treatment: Suitable treatment for the removal of adult worms from infected individuals with hexylresorcinol, oil of chenopodium, or santonin, with preference in the order named.

   B. General measure:

      Provision for adequate facilities for proper fecal disposal and elimination of soil pollution in areas immediately adjacent to the home, particularly in play areas of children.

      In rural sections, privies should be so constructed as to obviate dissemination of ascarid ova through overflow, drainage, and other factors.

      Education of all members of family, particularly children, to use toilet facilities available.

      Encouragement of satisfactory hygienic habits on the part of children in particular, especially the practice of washing the hands before handling food, and after defecating.

Chickenpox (Varicella)

1. *Recognition of the disease.*—Clinical picture is of an acute disease, with a slight fever, mild constitutional symptoms, and an eruption, maculopapular for a few hours, often not observed, vesicular lasting 3 to 4 days, leaving a granular scab. Vesicles tend to be more abundant on the covered than on the exposed parts of the body, and frequently appear in different stages on the same region of the body. The vesicles may be so few as to escape observation.
2. *Etiological agent.*—A specific filterable virus.
3. *Source of infection.*—The infectious agent is presumably present in the lesions of the skin and of the respiratory tract; lesions of the latter,

appearing early and sometimes inapparent, may render the disease communicable before the exanthem is in evidence.

4. *Mode of transmission.*—Directly from person to person; indirectly through articles freshly soiled by discharges from an infected person.
5. *Incubation period.*—Two to three weeks.
6. *Period of communicability.*—Probably not more than 6 days after the appearance of the first crop of vesicles, and certainly not more than 10 days. Especially communicable in the early stages of the eruption. One of the most readily communicable of diseases.
7. *Suspectibility and immunity.*—Susceptibility is practically universal among those who have not previously had the disease. An attack confers permanent immunity, with rare exceptions. Passive temporary immunity may be conferred by the use of convalescent serum from those recently recovered.
8. *Prevalence.*—Universal. Probably 90 percent of persons have had the disease by the time they are 15 years of age. Not uncommon in early infancy. Winter and spring are seasons of greatest prevalence in North America.
9. *Methods of control:*
   - A. Premises not placarded.
   - B. The infected individual, contacts, and environment:
     1. Recognition of the disease and reporting: The chief public health importance of this disease is that cases thought to be chickenpox in persons over 15 years of age, or at any age during an epidemic of smallpox, are to be investigated to eliminate the possibility of their being smallpox.
     2. Isolation: Exclusion from school, and avoidance of contact with nonimmune persons. The isolation period shall be a minimum of ten days and release by inspection of health officer or his representative.
     3. Concurrent disinfection: Articles soiled by discharge from lesions.
     4. Terminal disinfection: Thorough cleaning.
     5. Quarantine: None.
     6. Immunization: Passive immunization of suspectible children may be of value in institutions when exposure is feared, or under exceptional conditions in individual cases.
     7. Investigation of source of infection: Of no importance unless in persons over 15 years of age or when smallpox is suspected or is locally prevalent.
   - C. General measures:
     1. School authorities shall be notified regarding the case and instructed to observe all children carefully for three weeks after exposure for any sign of the disease and to exclude from school any children with suggestive symptoms and to notify the local health officer.
     2. Contacts may remain in school if inspected daily by a nurse or the teacher.

Cholera

1. *Recognition of the disease.*—In a few mild cases, diarrhea may be the chief or only symptom. In the typical case, rice-water stools, vomiting, and general symtoms of dehydration occur with thirst, pain, and coma. The cholera vibrios are found in the stools.
2. *Etiological agent.*—Cholera vibrio, *Vibrio comma.*
3. *Source of infection.*—Bowel discharges and vomitus of infected persons, and feces of convalescent or healthy carriers. Ten percent of contacts may be found to be carriers.
4. *Mode of transmission.*—By food and water polluted by infectious agent; by contact with infected persons, carriers, or articles freshly soiled by their discharges; by flies.
5. *Incubation period.*—One to five, usually three, days, occasionally longer if the healthy carrier stage, before development of symptoms, is included.
6. *Period of communicability.*—Usually 7 to 14 days or longer and until the infectious organism is absent from the bowel discharges. A high degree of communicability is usual.
7. *Susceptibility and immunity.*—Susceptibility is general, although natural immunity appears to exist to a limited degree. Acquired immunity is uncertain. Active artificial immunity for about one year may be obtained by vaccines.
8. *Prevalence.*—Absent in North America (except when introduced from abroad). Appears in epidemic form frequently in the Philippines.
9. *Methods of control:*
   A. The infected individual, contacts, and environment.
      1. Recognition of the disease and reporting: Clinical symptoms confirmed by bacteriological examination of stools.
      2. Isolation of patient in hospital or screened room during communicable period.
      3. Concurrent disinfection: Prompt and thorough disinfection of the stools and vomited matter. Articles used by and in connection with the patient must be disinfected. Food left by the patient should be burned.
      4. Terminal disinfection: The room in which a sick patient was isolated should be thoroughly cleaned.
      5. Quarantine: Contacts for 5 days from last exposure, or longer if stools are found to contain the cholera vibrio.
      6. Immunization: Prophylactic immunization of contacts is useful and advisable.
      7. Investigation of source of infection: Search for unreported cases and carriers. Investigate possibility of infection from polluted drinking water or from contaminated uncooked foods.
   B. General measures:
      1. Rigid personal prophylaxis of attendants by scrupulous cleanliness, disinfection of hands each time after handling patient or touching articles contaminated by dejecta, the avoidance of eating or drinking anything in the room of the patient, and

the prohibition of those attendant on the sick from entering the kitchen.

2. The bacteriological examination of the stools of all contacts to determine carriers. Isolation of carriers.
3. Water should be boiled, if used for drinking or toilet purposes, or if used in washing dishes or food containers, unless the water supply is adequately protected against contamination or is so treated, as by chlorination, that the cholera vibrio cannot survive in it.
4. Careful supervision of food and drink: Where cholera is prevalent, only cooked foods should be used. Food and drink after cooking or boiling should be protected against contamination, as by flies and human handling.

C. Epidemic measures: Inspection service for early detection and isolation of cases; examination of persons exposed in infected centers for detection of carriers, with isolation or control of carriers; cleaning of rooms occupied by the sick, and the detention, in suitable camps for 5 days, of those desirous of leaving for another locality. Those so detained should be examined for detection of carriers.

Coccidioidomycosis (Coccidioidal Granuloma, "Valley Fever")

1. *Recognition of the disease.*—Commencing as a small, slowly extending papule appearing upon some nonhealing trivial wound, the characteristic lesion becomes a pustule which develops into a papillomatous base with many minute abscesses. Soreness and pain accompany the extension of the process. When the lesion develops in the lungs from inhaling spores, the condition resembles pulmonary tuberculosis. Identification of the infecting organism in the fresh discharges, pus, etc., by bacteriological examination and laboratory animal inoculation, confirms the diagnosis. The acute benign pulmonary form of the disease ("Valley fever") is common among newcomers in endemic areas, with symptoms similar to those of influenza, and with the development in some individuals of erythema nodosum.
2. *Etiological agent.—Coccidioides immitis.*
3. *Source of infection.*—Dust, soil and vegetation contaminated with the spores of the fungus.
4. *Mode of transmission.*—Through wounds of the skin smeared with contaminated soil or vegetation; inhalation of spores in dust and dry vegetation; and, in laboratories, inhalation of spores from cultures.
5. *Incubation period.*—Variable, 1 to 3 weeks in "Valley fever." Undetermined for coccidioidal granuloma.
6. *Period of communicability.*—As long as open lesions persist. Direct communication from person to person of little if any importance.
7. *Susceptibility and immunity.*—About four percent of newcomers to endemic areas are susceptible. Very few develop the granulomatous type of infection. There is evidence that an attack of the acute benign pulmonary type confers immunity.

8. *Prevalence.*—"Valley fever" is prevalent in endemic areas in Southern California, parts of Texas, and Arizona. Incidence highest in hot, dry weather, most common in white females. Recovery is usually complete. Coccidioidal granuloma is of sporadic occurrence in endemic areas, most common in males. Case fatality about 50 percent in the granulomatous form; only very few "Valley fever" cases progress to this form.
9. *Methods of control:*
   A. The infected individual, contacts, and environment:
      1. Recognition of the disease and reporting: Clinical characteristics and bacteriological confirmation.
      2. Isolation: None.
      3. Concurrent disinfection: All discharges from skin lesions of the infected individual, from necrotic lymph nodes, the sputum, and articles soiled with these.
      4. Terminal disinfection: Not important.
      5. Quarantine: None; neither contacts nor carriers are known to be spreaders of the disease.
      6. Investigation of source of infection: Unprofitable except as a research effort.
   B. General measures: None, other than education of persons generally in California that agricultural workers and laborers should have prompt treatment of skin wounds. Laboratory workers should exercise particular care in handling cultures of the infecting micro-organism and dried material which may contain its spores.

Conjunctivitis, Acute Infectious (of the Newborn, not including Trachoma)

(This title to replace the terms Gonorrheal ophthalmia, Ophthalmia neonatorum, and Babies' sore eyes.)

1. *Recognition of the disease.*—Acute redness and swelling of the conjunctiva of one eye or of both eyes, with muco-purulent and purulent discharge in which the infecting micro-organism is identifiable by microscopic and cultural methods.
2. *Etiological agent.*—The gonococcus or some member of a group of pyogenic organisms, including the hemoglobinophic bacilli.
3. *Source of infection.*—Discharges from conjunctivae, or adnexa, or genital mucous membranes of infected persons.
4. *Mode of transmission.*—Contact with an infected person or with articles freshly soiled with discharges of such person.
5. *Incubation period.*—Irregular, but usually 36 to 48 hours.
6. *Period of communicability.*—During the course of the disease and until the discharges from the infected mucous membranes have ceased. Readily communicable.
7. *Susceptibility and immunity.*—Susceptibility is general. Acquired immunity does not follow an attack of the disease.
8. *Prevalence.*—Occurrence varies widely according to the observance or neglect of prophylactic use of a solution of silver nitrate or equivalent preparation in the eyes of the newborn by the attendant at the delivery. An infrequent complication in the present-day care of the newborn.

9. *Methods of Control.*
   A. The infected individual, contacts, and environment:
      1. Recognition of the disease: Clinical symptoms, confirmed where possible by bacteriological examination.
      2. Isolation: None, provided the patient is under adequate medical supervision.
      3. Concurrent disinfection: Disinfection of conjunctival discharges and articles soiled therewith.
      4. Terminal disinfection: Thorough cleaning.
      5. Quarantine: None.
      6. Immunization: None.
      7. Investigation of source of infection—among persons recently in contact with the patient: The disease in the newborn is almost always due to infection from the genital tract of the mother.
   B. General measures:
      1. Use of silver nitrate solution in the eyes of the newborn; antepartum treatment of mother if gonorrhea is suspected.
      2. Systemic treatment with an appropriate chemotherapeutic agent, such as sulfapyridine or sulfathiazole.
      3. Education as to personal cleanliness and as to the danger of the use of common towels and toilet articles.
      4. Carrying out of the measures indicated in methods for control of gonorrhea.

65-153b. Newly born infant; treatment of eyes. Any physician or any person authorized by law to act as an obstetrician shall immediately upon the birth of an infant instill into the eyes of such newly born infant a prophylactic solution approved by the State Board of Health: *Provided, however,* That any person or parent shall not be required to employ such prophylactic if objection is made by written statement to the attending obstetrician within three days from the birth of said child: *And provided further,* That said written statement shall be attached to the birth certificate. (L. 1929, ch. 218, sec. 1.)

Dengue

1. *Recognition of the disease.*—An acute febrile infection of sharp onset, usually with two paroxysms of short duration. Intense headache, joint and muscle pains, and irregular eruption are usual.
2. *Etiological agent.*—A specific filterable virus.
3. *Source of infection.*—The blood of infected persons during first 5, usually during first 3 days of the disease.
4. *Mode of transmission.*—By the bite of infected mosquitoes (*Aëdes aegypti* or *Aëdes albopictus* in the oriental tropics), from 11 days after biting a patient until the death of the mosquito.
5. *Incubation period.*—Three to 15 days, most often 5 or 6 days.
6. *Period of communicability.*—From the day before onset to the fifth day of the disease. Degree of communicability depends on the prevalence of infected humans and abundance of *Aëdes aegypti* mosquitoes.

7. *Susceptibility and immunity.*—Susceptibility apparently universal. Acquired immunity may be temporary, but is usually permanent.
8. *Prevalence.*—Occurs only where the vector *Aëdes* mosquitoes exist, mainly in tropics and subtropics. When occurring in epidemic form in the United States, begins usually in southernmost states, moving north until the range of the vector mosquito is stopped by climate or the season of the year. Common, and in frequent epidemics, in the Philippines. Occurs equally among males and females; less among indigenous than among visiting or transient whites where the disease commonly occurs.
9. *Methods of control:*
   A. Premises are not placarded.
   B. The infected individual, contacts, and environment.
      1. Recognition of the disease and reporting.
      2. Isolation: The patient must be kept in a screened room.
      3. Concurrent disinfection: None.
      4. Terminal disinfection: None.
      5. Quarantine: None.
      6. Immunization: None.
      7. Investigation of source of infection: Seach for unreported or undiagnosed cases and for the *Aëdes aegypti* mosquito and its breeding places.
   C. General measures: Measures directed toward elimination of mosquitoes (*Aëdes aegypti*), screening of rooms.

Diphtheria (Including membranous croup)

1. *Recognition of the disease.*—An acute febrile infection, generally of the air passages, especially of tonsils, throat, and nose, marked by a patch or patches of dirty white and grayish membrane, from which cultures of the diphtheria bacillus may be obtained. Cases of diphtheritic infection in infants and of nasal diphtheria at all ages are often missed because of the lack of definite local symptoms.
2. *Etiological agent.*—Diphtheria bacillus, *Corynebacterium diphtheriae* (the Klebs-Loeffler bacillus).
3. *Source of infection.*—Discharges from diphtheritic lesions of nose, throat, conjunctiva, vagina, and wound surfaces. Secretions from the nose and throat of carriers of the bacillus.
4. *Mode of transmission.*—Directly by personal contact, indirectly by articles freshly soiled with discharges, or through infected milk or milk products.
5. *Incubation period.*—Usually 2 to 5 days, occasionally longer if the carrier state precedes the development of clinical symptoms.
6. *Period of communicability.*—Variable, until virulent bacilli have disappeared from the secretions and the lesions. Usually 2 weeks or less, seldom over 4 weeks. In exceptional cases virulent bacilli remain in the throat and discharges from 2 to 6 months.
7. *Susceptibility and immunity.*—Infants born of mothers with an established immunity are relatively immune for the first 6 months of life. By the ninth month of life this passive congenital immunity has been lost in a

high percentage of infants. Subsequently children and adults develop immunity apparently in approximate proportion to their contact with associates who carry the diphtheria bacillus with or without exposure to persons with recognized attacks of the disease. It is usual to find about half of the children of school age and three-quarters of adults in large cities immune. Such accidental immunity is less frequent among rural and small-town populations. Passive temporary immunity (10 days to 3 weeks) and active immunity of relatively permanent duration can be developed artificially. Recovery from attack of the disease, especially if with the aid of therapeutic diphtheria antitoxin, is not necessarily followed by active immunity.

8. *Prevalence.*—Endemic and epidemic. Two-thirds or more of the urban cases are in children under 10 years of age and two-thirds or more of the urban deaths occur in children under 5 years of age. More common in temperate zones than elsewhere, and in fall and winter months. Reduction in incidence, death rate, and case fatality rate has been progressive and marked in the past 30 years.

9. *Methods of control:*

A. The premises shall be placarded.

B. The infected individual, contacts, and environment:

1. Recognition of the disease and reporting. By clinical symptoms with confirmation by bacteriological examination of discharges.
2. Isolation: No member of any household in which diphtheria or membraneous croup exists and no person afflicted with or recovering from such diseases shall be permitted to appear on the public streets or highways or in any public place, or attend any place of public amusement or worship, or visit any other private house, until after danger from contagion is passed and said household premises thoroughly disinfected.

   Such quarantine restrictions shall be maintained until two successive negative bacteriological cultures have been obtained from the nose and throat of the patient at intervals of forty-eight hours, and until one negative culture shall have been obtained from each of the other members of the household, but in no case shall minimum period of release from quarantine on two negative cultures from the patient be less than fourteen days from the onset of the disease. In certain communities conditions may make such procedure impracticable, or families refuse to have cultures taken, in either of which event the minimum period of such quarantine shall not be less than twenty-five days from the beginning of the disease and as long thereafter as false membrane or evidence of sore throat or any discharge from eyes, ears, nose or throat remains: *Provided,* That where patients are properly isolated and contact with them is avoided, after negative cultures from the nose and throat, wage earners may be allowed to continue their occupations when employed in industries other than the production, manufacture or sale of wearing apparel and foodstuffs, and when their employment does not bring them in contact with children.

3. Concurrent disinfection of all articles which have been in contact with the patient, and all articles soiled by discharges of the patient.
4. Terminal disinfection: At the end of the illness, thorough airing and sunning of the sick room, with cleaning or renovation.
5. Quarantine: All intimate child contacts, and adult contacts whose occupation involves handling of foods or close association with children, until shown by bacteriological examination not to be carriers.
6. Immunization: Passive immunization with antitoxin is rarely necessary for exposed persons over 5 years of age, for whose protection daily examination by a physician or nurse suffices. Infants and young children exposed to diphtheria in the family should receive a prophylactic dose of antitoxin without prior Schick testing, unless they are known to have been immunized.
7. Investigation of source of infection: In unreported cases, in carriers, and milk.

C. General measures:

1. All children should be immunized against diphtheria. The following procedure is recommended: At nine months of age, the injection, subcutaneously, of either two doses of diphtheria toxoid, alum precipitated, or three doses of fluid diphtheria toxoid, at one month intervals. This same procedure should be applied to all children at or below 6 years of age if immunization has been neglected in infancy. Children given an immunizing treatment during infancy should receive a single reinforcing dose on entrance to school.
2. Older children, and adults especially exposed, including teachers, nurses, and physicians, found to be Schick-positive should be actively immunized. In order to minimize local and constitutional reactions in members of these groups, it is desirable to carry out a preliminary "toxoid reaction test," nonreactors to receive toxoid and reactors multiple small doses of suitably diluted toxoid.
3. Pasteurization of milk supply.
4. Educational measures to inform the public, and particularly the parents of little children, of the advantages of toxoid immunization in infancy.
5. To prevent the spread of diphtheria whenever the disease is present in any school district, the city or county health officer having jurisdiction shall immediately notify the Kansas State Board of Health and if the secretary and executive officer of the Board in his judgment deems it necessary, all children between the ages of five and twelve years who have not previously received the immunization treatment against diphtheria shall be excluded from attendance at school until fourteen (14) days after the appearance of any new cases in the district. Children may be readmitted as soon as satisfactory evidence is presented to the health officer that they have received the protective treatment against diphtheria.

D. Carriers:

All persons found to be carriers of virulent diphtheria bacilli shall not be permitted to work in industries involving the manufacture and sale of food stuffs for public consumption, or whose occupation requires close association with children, until they cease carrying virulent organisms.

Dysentery, Amebic (Amebiasis)

1. *Recognition of the disease.*—Insidious and undetermined onset characterizes mild acute cases, with digestive disturbance, anorexia, diarrhea or constipation, and usually little abdominal discomfort. Severe acute cases following massive infection may simulate acute appendicitis, or other acute surgical abdominal condition with high temperature and severe prostration. The subacute and chronic forms of the disease vary widely in the extent of local and constitutional symptoms. There may or may not be diarrhea or constipation; or these may alternate in the same patient.
2. *Etiological agent.—Endamoeba histolytica.*
3. *Source of infection.*—The bowel discharges of infected persons and of carriers.
4. *Mode of transmission.*—By drinking contaminated water and by eating infected foods, especially those that are commonly served cold and moist, and hand-to-mouth transfer of the infected material from moist objects soiled with discharges of an infected individual or carrier; by flies.
5. *Incubation period.*—From 2 days in severe infections to several months in subacute and chronic cases; commonly 3 to 4 weeks.
6. *Period of communicability.*—During course of infection and until repeated microscopic examination of stools shows absence of the *Endamoeba histolytica* (either trophozoites or cysts). Direct transmission unusual.
7. *Susceptibility and immunity.*—Susceptibility to infection or to the carrier state is general; relatively few persons harboring the organism develop recognized symptoms; no artificial immunity.
8. *Prevalence.*—Not a common disease clinically recognized in continental North America but occurring often as an unrecognized disease. Epidemic outbreaks are rare. It is estimated that almost 5 percent of the population are carriers of cysts.
9. *Methods of control:*
   A. Premises not placarded.
   B. The infected individual, contacts, and environment:
      1. Recognition of the disease and reporting: Clinical symptoms confirmed by microscopic examination of stools.
      2. Isolation: None.
      3. Concurrent disinfection: Sanitary disposal of the bowel discharges. Hand washing after use of toilet.
      4. Terminal disinfection: Cleaning.
      5. Quarantine: None.
      6. Immunization: None.

7. Investigation of source of infection: Microscopic examination of stools of inmates of the household, or of work associates of the infected person, and of other suspected contacts, should be supplemented by search for direct contamination of water and foods by human feces.

C. General measures:
1. Sanitary disposal of human feces.
2. Protection of potable water supplies against fecal contamination, and boiling drinking water where necessary. Chlorination of water supplies as generally used has been found inadequate for the destruction of cysts.
3. Supervision of the general cleanliness, of the personal health and sanitary practices of persons preparing and serving food in public eating places, especially moist foods eaten raw. The routine examination of food handlers to eliminate carriers from such occupations is of little or no practical value.
4. Education in personal cleanliness, particularly washing hands with soap and water after evacuation of the bowels.
5. Control of fly breeding and protection of foods against fly contamination by screening.
6. Avoidance of cross-connections between public and private auxiliary water supplies and of back-flow connections in plumbing systems.
7. Instruction of convalescent and chronic carriers in personal hygiene, particularly as to sanitary disposal of fecal waste, and hand washing after use of toilet.

D. Epidemic measures: In case of epidemics due to relatively massive doses of infectious material, active measures should be employed to discover the source of infection, and to advise the public and the medical profession of the early and characteristic symptoms, of the serious immediate and remote results of such infection, and of the good results of treatment if instituted early.

Dysentery, Bacillary

1. *Recognition of the disease.*—The disease exhibits an acute onset with diarrhea, in severe cases causing fever, tenesmus, and frequent stools containing blood and mucus. The milder cases are difficult to recognize clinically because of variability of symptoms. By adequate laboratory examination the infecting organism can usually be identified.
2. *Etiological agent.*—Dysentery bacilli, *Shigella dysenteriae, Shigella paradysenteriae,* and other species of the genus *Shigella.*
3. *Source of infection.*—The bowel discharges of infected persons and carriers. Healthy carriers are common.
4. *Mode of transmission.*—By eating contaminated foods, and by hand-to-mouth transfer of contaminated material; by flies; from objects soiled with discharges of an infected individual or of a carrier; by drinking contaminated water.

5. *Incubation period.*—1 to 7 days.
6. *Period of communicability.*—During the acute phase of the disease and until the micro-organism is absent from the bowel discharges. The stools may become negative rapidly, but chronic carriers occur.
7. *Susceptibility and immunity.*—Susceptibility is general among children, but less so, and the disease less severe, in adults. A relative and not permanent immunity follows recovery from the disease.
8. *Prevalence.*—Endemic, epidemic, and sporadic, but shares with other enteric infections in striking and progressive reduction wherever water supplies are rendered safe, sewage is disposed of in a sanitary manner, milk is pasteurized, and infant hygiene is of a good order. Most common in the summer months. Institutional outbreaks are frequent.
9. *Methods of control:*
   A. The infected individual, including carriers, contacts and environment.
      1. Recognition of the disease and reporting:* Clinical symptoms confirmed by bacteriological tests.
      2. Isolation: Infected individuals during the communicable period of the disease, particularly rigid personal precautions by attendants.
      3. Concurrent disinfection: Bowel discharges.
      4. Terminal disinfection: Cleaning.
      5. Quarantine: None.
      6. Immunization: No method of immunization is satisfactory. Vaccines contain only a few of the many antigens and in addition reactions from their use may be severe.
      7. Investigation of source of infection: Important in epidemics; investigation of food, water, and milk supplies, general sanitation, and search for carriers may serve to detect the source and prevent further spread. For sporadic cases such investigation is time-consuming and gives meager results.
   B. General measures:
      1. Protection and purification of public water supplies, together with prevention of subsequent contamination.
      2. Pasteurization of public milk supplies; use of boiled milk for infant feeding.
      3. Supervision of preparation and handling of other foods, particularly those which are moist and eaten raw.
      4. Hand washing, by food handlers in particular, following use of toilet.
      5. Prevention of fly-breeding; screening.
      6. Sanitary disposal of human excreta.
      7. Persons known to be infected, *including carriers,* and their attendants, should be excluded from handling food for public consumption, and from handling the family milk supply, if possible. Persons known to be infected or carriers shall be considered a carrier until repeated bacteriological examination of discharges shows the absence of the infecting organism.

* Groups of cases of acute diarrheal disorder should always be reported to the health officer at once, even in the absence of exact determination of the nature of the disease.

8. The exercise of rigid precautions in known cases of bacillary dysentery is requisite but is inadequate as a safeguard against the ever-present risk of infection from concealed sources. Reduction of high infant mortality rates is dependent upon prevention of diarrhea and enteritis. Infant hygiene, including breast feeding, scrupulous cleanliness at all times in the preparation and handling of food for children, and continuous attention to diet in order to avoid minor digestive disturbances that may lower resistance to the infection will do much toward accomplishing this aim. As a precautionary measure, all cases of infantile diarrhea should be regarded as bacillary dysentery. Prevention of epidemics of bacillary dysentery by guarding against massive dissemination of infection should be a major concern, particularly in prisons, camps, and institutions.

Encephalitis, Infectious (Lethargic and Nonlethargic)

1. *Recognition of the disease.*—Largely clinical. At least 4 forms occur in the United States: the Vienna type (originally called lethargic von Economo, later called type A), the St. Louis type, the Eastern equine type, and the Western equine type. The last three resemble each other and the Japanese type B (which is not known to occur in the United States) more than any of them resemble the Vienna type. The Vienna type is the most chronic and variable in course, often with a mild febrile onset, later with symptoms of brain or nerve involvement, such as slight meningeal irritation, somnolence, diplopia or evident paralysis of eye muscles, insomnia, restlessness, twitching, myoclonia, catatonia, with or without fever; and still later at times, slow, semirigid movements, coarse tremor, masklike expression or other disturbances of motility, psychic or behavior disturbances, often with exacerbations and remissions over several years. Though an individual case of the St. Louis type may be indistinguishable from the Vienna type, in the St. Louis type the onset is usually more abrupt as to fever and headache, with drowsiness rather than deep sleep, disorientation, motor disturbances, but very infrequent paralysis of the eye muscles, meningeal irritation with an increase of cells in the spinal fluid more uniformly than in the Vienna type, and usually complete and fairly prompt recovery in the nonfatal cases. All ages are attacked in all four types, children and young adults more frequently in the Vienna and Western equine types, the older ages in the St. Louis (and Japanese B) types, very young children in the Eastern equine type. The Western equine type is somewhat similar clinically to the St. Louis type, while the Eastern equine type has been a more severe and fatal disease in humans and is likely to leave nervous and mental sequellae in the patients who survive. These forms of encephalitis are to be distinguished from post- or para-infectious encephalitis which follows or accompanies such infections as measles, vaccinia, and chickenpox, by the history of the other infection immediately preceding.
2. *Etiological agent.*—Probably a virus for the Vienna type; a specific filterable virus for each of the other types.

3. *Source of infection.*—Unknown. Birds are a probable reservoir of infection for the Eastern equine type.
4. *Mode of transmission.*—In the case of the equine types of encephalitis several species of the *Aëdes* mosquito have been shown to be capable of transmitting the virus under laboratory conditions.
5. *Incubation period.*—Four to twenty-one days for the St. Louis type.
6. *Period of communicability.*—Unknown.
7. *Susceptibility and immunity.*—Natural immunity or immunity resulting from an attack are assumed to occur, but have not been proved except by the ability of the blood serum to neutralize viruses of the St. Louis, and Eastern and Western equine types.
8. *Prevalence.*—The Vienna type was first distinctly recognized in 1917, but had occurred before, and has since been prevalent in many parts of the world, especially from 1920 to 1926, infrequently now. The St. Louis type was especially prevalent in the St. Louis area in 1933, where there was an incidence of 100 per 100,000 population, but this type has occurred elsewhere before and since. The Vienna type occurs at all seasons of the year but more frequently in late winter and spring. The other types occur notably in late summer and fall outbreaks.
9. *Methods of control:*

   A. Premises not placarded.

   B. The infected individual, cantacts, and environment:
      1. Recognition of the disease and reporting: Clinical symptoms, assisted by microscopical and chemical examination of the spinal fluid if lumbar puncture is performed. Virus has been isolated from the brain tissue of fatal cases of all types except the Vienna type. Development of specific neutralizing power in the blood serum of patients may be an aid to identification of the type if suitable laboratory facilities are available.
      2. Isolation: For one week after onset.
      3. Concurrent disinfection: Discharges from the nose, throat, and bowels, and articles soiled therewith.
      4. Terminal disinfection: None.
      5. Quarantine: None.
      6. Immunization: None.
      7. Investigation of source of infection: Search for prior cases in the community and for unreported cases among the associates of the patient may develop useful epidemiological information, but so far has been of no practical value in control of the different types of this disease.

   C. General measures: Mosquito control if practicable. *Aëdes vexans,* which has been suspected in the spread of the Eastern equine virus to human cases, would usually be difficult to control.

Favus

1. *Recognition of the disease.*—A parasitic fungus disease of the skin, usually on the scalp, marked by cup-shaped yellowish crusts covering the hair follicles.
2. *Etiological agent.*—*Trichophyton schoenleini* (*Achorion schoenleini*).
3. *Source of infection.*—Lesions of skin, particularly on scalp, rarely on nails.
4. *Mode of transmission.*—Direct contact with patient, and indirectly through toilet articles.
5. *Incubation period.*—Unknown.
6. *Period of communicability.*—Until skin and scalp lesions are all healed as shown by absence of scaling and erythema, to be confirmed by microscopic examination, culture, and absence of fluorescence under a suitable ultraviolet light.
7. *Susceptibility and immunity.*—Infection by this fungus is frequent with the presence of another patient in the family, and with neglect of personal cleanliness.
8. *Prevalence.*—Rare in children in North America, and when occurring can usually be traced to immigrants from southern and eastern Europe.
9. *Methods of control:*
   A. The infected individual, contacts, and environment:
      1. Recognition of the disease and reporting: Clinical symptoms confirmed by microscopic examination of crusts, and cultures on Sabouraud's medium.
      2. Isolation: Exclusion of patient from school and other public places until lesions are healed. Patient should wear a light, tight-fitting cotton skull cap constantly. This must be changed frequently and boiled.
      3. Concurrent disinfection: Toilet articles of patient.
      4. Terminal disinfection: None.
      5. Quarantine: None.
      6. Immunization: None.
      7. Investigation of source of infection: Search for unreported and unsuspected cases among immediate home or play or work associates of the patient.

   B. General measures:
      1. Elimination of common utensils, such as hair brushes and combs.
      2. Provision for adequate and intensive treatment and cure of cases of favus at hospitals and dispensaries, to abbreviate the period of infectivity of the patient.

Filariasis

1. *Recognition of the disease.*—Characterized by recurrent lymphadenitis and lymphangitis, particularly of the lower extremities, accompanied by febrile phenomena, chyluria, and later, evidence of lymphatic obstruction of the lower part of the body such as elephantiasis, varicose lymph glands, and lymph scrotum. Before the development of symptoms em-

bryos are found in night blood; embryos are generally not found in the circulating blood after the development of marked symptoms.

2. *Etiological agent.*—A nematode worm. Several species of filariids are known to infect man; filariasis usually refers to infection with *Wuchereria bancrofti,* which is the only species reported in the United States.
3. *Source of infection.*—Certain species of mosquitoes harboring the infective larvae.
4. *Mode of transmission.*—In North America generally transmitted by the mosquito *Culex fatigans.* After this mosquito takes a blood meal from a person with circulating filaria embryos, the embryos develop in the mosquito into infective larvae in 14 to 21 days, at which time they migrate to the proboscis, from that location they penetrate the human skin when brought in contact with it by the mosquito.
5. *Incubation period.*—Embryo filariae are not found in blood until at least 9 months after exposure; symptoms are not likely to develop for several years.
6. *Period of communicability.*—In man, as long as embryos are present in the blood; not sooner than 9 months from the time of exposure. In the mosquito, 14 to 21 days after larvae have developed and are present in its head and proboscis.
7. *Susceptibility and immunity.*—As far as is known, all persons are susceptible and no immunity develops.
8. *Prevalence.*—Rare in the continental United States; previously reported cases practically limited to Charleston, S. C. It is believed that this focus of infection no longer exists. Common in most tropical and subtropical parts of the world including Puerto Rico, Virgin Islands, and Philippines.
9. *Mehods of control:*
   A. The infected individual, contacts, and environment:
      1. Recognition of the disease and reporting.
      2. Isolation: Not practicable.
      3. Quarantine: None.
      4. Immunization: None.
      5. Investigation of source of infection most important. Surveys of incidence and range in endemic foci.
      6. Anti-mosquito measures should be undertaken against the transmitting mosquito, particularly in endemic areas. In the case of *Culex fatigans,* the mosquito generally breeds in filthy locations such as in septic tanks, collections of rain water in tin cans, etc. Screening of sleeping places of considerable value because *Culex fatigans* usually feeds at night.
   B. General measures: Education of the public concerning the mode of transmission of filariasis and methods of mosquito control.

German Measles (Rubella)

1. *Recognition of the disease.*—A febrile infection occurring frequently in epidemics, characterized by a polymorphous rash, sometimes resembling that of measles, sometimes that of scarlet fever, and sometimes of both

at the same time; few or no constitutional symptoms but almost always enlargement of post-auricular, sub-occipital and cervical, and occasionally of other, lymph nodes. Usually absence of leukocytosis.

2. *Etiologocal agent.*—Unknown.
3. *Source of infection.*—Secretions of the mouth and possibly of the nose.
4. *Mode of transmission.*—By direct contact with the patient or with articles freshly soiled with the discharges from the nose or throat of the patient.
5. *Incubation period.*—From 14 to 21 days; usually about 16 days.
6. *Period of communicability.*—From onset of catarrhal symptoms for at least 4 days, but not more than 7, the exact period is undetermined. Highly communicable.
7. *Susceptibility and immunity.*—Susceptibility is general among young children. An attack usually confers permanent immunity.
8. *Prevalence.*—Epidemic in expression, occurring mostly in childhood, but more in adults than is the case with measles. Commoner in urban than in rural communities, and oftener in winter and spring than at other seasons.
9. *Methods of control:*

   A. Premises not placarded.

   B. The infected individual, contacts, and environment:
      1. Recognition of the disease and reporting: *See note below.*
      2. Isolation period shall be determined by the local health officer.
      3. Concurrent disinfection: None.
      4. Terminal disinfection: None.
      5. Quarantine: None.
      6. Immunization: None.
      7. Investigation of source of infection: Of no importance except to clarify doubts created by clinical difficulty in distinguishing this disease from scarlet fever in its early stages.

   C. General measures:
      School authorities shall be notified and instructed to observe all children carefully for 21 days after exposure for any signs of the disease and to exclude from school any children with suggestive symptoms and to notify the local health authorities.

Glanders

1. *Recognition of the disease.*—Occurs in two forms, one external affecting the skin and known as "farcy," and an internal form known as "glanders." It may appear as an acute or chronic disease, with widely variable symptoms, the diagnosis being established by one or other of the following biological reactions: The complement fixation test, the mallein test, the agglutination test, or by nonspecific reactions, such as the Strauss reaction, if confirmed by culture and identification of the *Malleomyces* mallet, or by autopsy where diagnosis has been uncertain at time of death.
2. *Etiological agent.*—Glanders bacillus. *Mallcomyces mallei* (*Bacillus mallei*).
3. *Source of infection.*—Discharges from open lesions of mucous membranes,

or of the skin of human or equine cases of the disease (i.e., pus and mucus from the nose, throat, and bowel discharges from infected man and horse).

4. *Mode of transmission.*—Contact with a case or with articles freshly soiled by discharges from a human or equine case.
5. *Incubation period.*—Undetermined; usually 1 to 5 days.
6. *Period of communicability.*—Until bacilli disappear from discharges or until lesions have healed.
7. *Susceptibility and immunity.*—Susceptibility appears to be common. Immunity is believed to follow recovery from the infection.
8. *Prevalence.*—Rare and sporadic and almost exclusively in men occupied about horses. In widespread and local epidemics as an epizootic in horses.
9. *Methods of control:*

A. The infected individual, contacts, and environment:
   1. Recognition of the disease and reporting. (See note.)
   2. Isolation: Human case at home or hospital; for infected horses destruction rather than isolation is advised. Skin contact with the lesions in the living or dead body is to be scrupulously avoided.
   3. Concurrent disinfection: Discharges from human cases and articles soiled therewith.
   4. Terminal disinfection: Stables and contents where infected horses are found.
   5. Quarantine of all horses in an infected stable until all have been tested by specific reaction, and the removal of infected horses and terminal disinfection of stable have been accomplished.
   6. Immunization: None of established value or generally accepted.
   7. Investigation of source of infection: Carriers not known in humans. Search for infected horses especially in sales stables, by observation and specific laboratory tests.

B. General measures:
   1. The abolition of the common drinking trough for horses.
   2. Sanitary supervision of stables and blacksmith shops.
   3. Semiannual testing of all horses by a specific reaction where the disease is common.
   4. Testing of all horses offered for sale where the disease is common.

Gonorrhea

See Chap. XII, Veneral Diseases—Additional Rules and Regulations.

1. *Recognition of the disease.*—Occurring initially as an infection of one of the mucous membranes, most frequently of the genital tract, urethra in both sexes, the vaginal or uterine mucosa in the female, the disease

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NOTE.—The reason for notification of this disease is that it may be confused with scarlet fever during its early stages: each person having symptoms of the disease should therefore be placed under the care of a physician and the case should be reported to the local department of health.

develops as an acute or chronic process in adjacent or remote tissues, among the latter especially as arthritis and endocarditis. Relapsing and chronic inflammatory discharging conditions at the site of original attack are common. Demonstration of the etiological agent in the lesions or discharges is the best and only certain diagnostic procedure.

2. *Etiological agent.*—Gonococcus, *Neisseria gonorrhoeae.*
3. *Source of infection.*—Discharges from lesions of inflamed mucous membranes and glands of infected persons, viz., urethral, vaginal, cervical, conjunctival mucous membranes, and Bartholin's or Skene's glands in the female, and Cowper's and the prostate glands in the male.
4. *Mode of transmission.*—By direct personal contact with infected persons, and indirectly by contact with articles freshly soiled with the discharges of such persons. In adults by sexual intercourse; in children by other personal and indirect contact with discharges.
5. *Incubation period.*—One to 8 days, usually 3 to 5 days.
6. *Period of communicability.*—As long as the gonococcus persists in any of the discharges, whether the infection be an old or a recent one. Readily communicated in sexual intercourse.
7. *Susceptibility and immunity.*—Susceptibility appears to be general. Acquired immunity does not occur generally, but some degree of transient local immunity may appear during infection. One attack does not protect against subsequent infection.
8. *Prevalence.*—Widespread in both sexes and at all ages, but most common among men from 18 to 40 years of age and among women at a little earlier age. Endemic, sporadic, and epidemic.
9. *Methods of control:*

   A. The infected individual, contacts and environment:
      1. Recognition of the disease and reporting: Clinical symptoms, confirmed by bacteriological examination or serum reaction.
      2. Isolation: When the lesions are in the genitourinary tract, exclusion from sexual contact, and when the lesions are conjunctival, exclusion from school or contact with children, as long as the discharges contain the gonococcus.
      3. Concurrent disinfection: Discharges from lesions and articles soiled therewith.
      4. Terminal disinfection: None.
      5. Quarantine: None.
      6. Immunization: None.
      7. Investigation of source of infection: Each acute case should be traced to probable source of infection and appropriate control and treatment of this spreader of disease instituted. Infected persons may become carriers for periods not yet determined with certainty, but occasionally for a year or more.

NOTE.—In this disease, as in all infections or communicable diseases from which both animals and humans suffer, cases occurring in animals should be reported to the Department of Agriculture or livestock sanitary authority, and human cases should be reported to the Department of Health, reciprocal notification thereafter to be accomplished through official interdepartmental channels.

B. General measures:

1. Provision of accurate and early diagnosis and careful treatment of infected persons with an appropriate chemotherapeutic agent such as sulfapyridine or sulfathiazole. Search should be made for all recent contacts with infected patients and provision made for following all cases until acute manifestations have subsided.
2. Education in matters of sexual hygiene, particularly as to the fact that continence in both sexes at all ages is compatible with health and normal development.
3. Repression of commercialized prostitution, and associated use of alcoholic beverages, by police or other competent authority.
4. Restriction of advertising of services and medicines for the self-treatment of sex diseases, etc.
5. Elimination of common towels and toilet articles from public places.
6. Use of prophylactic silver solution in the eyes of the new-born.
7. Personal prophylaxis should be advised and made available for use before or immediately after sexual intercourse to those who expose themselves to infection.
8. Exclusion of persons in the communicable stage of the disease from occupations involving contact with children.

Hemorrhagic Jaundice

(*Spirochetosis Icterohemorrhagic,* Weil's Disease)

1. *Recognition of the disease.*—An acute infection characterized by malaise, prostration, gastrointestinal symptoms, muscular pains, and fever at the onset, followed by defervescence, jaundice, and signs of nitrogen retention, of varying degree and duration. Relapses may occur. Severe cases develop hemorrhages at various sites and renal damage may be marked. About 50 percent of cases are without jaundice. Isolation of Leptospira icterohaemmorhagiae of L. canicola by inoculation of guinea pigs with the blood early in the course of the disease, or with the urine later, definitely identifies the condition. Positive serological tests strongly indicate the presence of Weil's disease.
2. *Etiological agent.*—Leptospira icterohaemmorhagiae, found in the blood or urine of patients and in the renal tract of rats. L. canicola, primarily a spirochete of dogs, is found in some human cases.
3. *Source of infection.*—Urine of rats and dogs. Contaminated water and food stuffs are important. Foxes, sheep, cats, and mice are at times involved.
4. *Mode of transmission.*—It appears that ingestion of contaminated food and water plays a role and that continued exposure of abraded or unabraded skin to alkaline waters containing the Leptospirae may lead to infection. Sewer workers, fish workers, coal miners, and veterinarians are especially exposed to infection.
5. *Incubation period.*—Four to 19 days, average 9 to 10 days.
6. *Period of communicability.*—The urine of patients continues to contain organisms for weeks or months following convalescence. Only one human

case has been traced to direct contact. Ten to 50 percent of wild rats harbor Leptospirae in their kidneys. They are persistent carriers.

7. *Susceptibility and immunity.*—Susceptibility is general. Natural immunity does not exist and artificial immunity is still questionable. A refractory state develops following recovery, and immune bodies may be detected for a considerable period thereafter.

8. *Prevalence.*—The disease is present in rats over the entire world. Dogs are also infected to a considerable degree. Man develops the disease when conditions are such as to allow unusually close contact between man and rats or dogs. Sporadic human cases have been reported from widely distributed cities in the United States.

9. *Methods of control:*

A. The infected individual, contacts, and environment:
   1. Recognition of the disease and reporting: Characteristic clinical symptoms, isolation of the organism from the blood or urine, and positive serological tests.
   2. Isolation: None.
   3. Concurrent disinfection: Urine and other discharges of patient.
   4. Terminal disinfection: None.
   5. Quarantine: None.
   6. Immunization: None practical.
   7. Investigation of source of infection: Search for rats or dogs harboring the Leptospirae and for source of food or water to which such animals have access, e.g., communal baths, fish-cleaning establishments, mines, sewers, etc.

B. General measures:
   1. Rat control by ratproofing, trapping, and poisoning.
   2. Sanitary disposal of human wastes in civil and military environment.
   3. Destruction of Leptospirae in nature by drainage of mines and soil, and disinfection of water in fish-cleaning establishments with 1:60 hypochlorite solution.
   4. Education in the value of proper disposal of water, storing and keeping foods, and other general sanitary measures.
   5. Protection of workers exposed to infection by preventing organisms from entering through the skin and mouth by the use of boots, gloves, avoidance of skin abrasions.

Hookworm Disease (Ancylostomiasis)

1. *Recognition of the disease.*—The symptomatology varies greatly in accordance with the degree of infection and other factors. The presence of only a few worms may give rise to no symptoms. Moderate to severe infections may be characterized by abdominal pain, indigestion, flatulence, abnormal or depraved appetite, and distended abdomen. Some cases show severe diarrhea; others may have alternate constipation and diarrhea. The skin is sallow, dry, and harsh. The patient is depressed and listless, and the features expressionless. Children may show marked physical and mental retardation. Severe secondary anemia may be present and there is usually an eosinophilia. In severe cases, there is

frequently edema in various parts of the body, particularly in the dependent portions. Dermatitis or so-called "ground-itch" may be present on the feet or other parts of the body coming in contact with contaminated soil. Systemic symptoms are usually more pronounced in patients on an inadequate or unbalanced diet and those suffering concomitantly from malaria and other debilitating conditions. Diagnosis is established by finding hookworm ova in the stools.

2. *Etiological agent.*—In the continental United States, *Necator americanus,* rarely *Ancylostoma duodenale.*

3. *Source of infection.*—Usually soil contaminated with infective larvae from ova in stools deposited by infected persons. Larvae usually penetrate through the skin, although infection can take place by mouth.

4. *Mode of transmission.*—The infective or third-stage larvae penetrate the skin, usually of the foot, and pass via the lymphatics to the inferior vena cava and the right heart, thence in the blood stream to the lungs, where they pierce the capillary walls and pass into the alveoli. They then pass up the bronchi and trachea to the throat, whence they are swallowed and finally reach the small intestine, where they develop to maturity. Infection can take place by mouth from water, soil, or contaminated objects harboring infective larvae; however, the chief mode of infection is through the skin.

5. *Incubation period.*—No incubation period occurs comparable to that observed in bacterial and virus infections. Onset of symptoms varies widely in time, according to the intensity of the infection, from 2 to 3 weeks in massive infections (commonly 7 to 10 weeks), to many months or even years where infection or reinfection is by small numbers of worms. The free living form may exist in the soil under favorable conditions for several weeks. Eggs are found in the stools in about 4 to 6 weeks after the larvae penetrate the skin, and develop the next generation of larvae 5 to 8 days after being deposited on soil, under favorable conditions.

6. *Period of communicability.*—Infected individuals remain potential spreaders of infection as long as they remain infected and continue to pollute soil. Third-stage larvae may remain alive in soil for several weeks under favorable conditions.

7. *Susceptibility and immunity.*—Susceptibility to infection is universal. In general adults are less frequently infected than children, and Negroes less frequently than whites. Some degree of immunity is developed by a person who has had an infection.

8. *Prevalence.*—Widely endemic in areas having favorable soil, moisture and temperature for development, and where winter temperatures are not sufficiently low to destroy larvae in soil. Occurs in the southern United States as far north as Kentucky; particularly prevalent in the sandy plain of the Atlantic Coast and Gulf States. Both incidence and intensity of infection have decreased during the last 25 years but the disease is still a serious problem in some parts of the continental United States and in Puerto Rico.

9. *Methods of control:*
   A. The infected individual, contacts, and environment:
      1. Recognition of the disease and reporting: Microscopic examination of bowel discharges.
      2. Isolation: None.
      3. Concurrent disinfection: Sanitary disposal of bowel discharges to prevent contamination of soil and water.
      4. Terminal disinfection: None.
      5. Quarantine: None.
      6. Immunization: None.
      7. Investigation of source of infection: Each case and carrier is a potential or actual spreader of the disease. All family contacts should be examined.
      8. Treatment: For the removal of worms from the intestinal tract appropriate treatment of clinical cases with tetrachlorethylene, hexylresorcinol, or carbon tetrachloride, with preference in the order named.
   B. General measures:
      1. Education as to dangers of soil pollution and methods of prevention.
      2. Prevention of soil pollution by installation of sanitary disposal systems for human discharges, especially sanitary privies in rural areas, and education of the public in the use of such facilities.
      3. Personal prophylaxis by cleanliness and the wearing of shoes.

Influenza

1. *Recognition of the disease.*—Whether occurring in a pandemic, in endemic-epidemic incidence, or as sporadic cases, this disease is characterized in its typical form by sudden onset, fever of 1 to 7 days' duration, accompanied by excessive prostration, aches and pains in back and limbs, coryza, sore throat, and bronchitis, and not uncommonly by pneumonia as a complication. During epidemics when such cases occur in large numbers and over a wide area, other cases of less distinctive type are found to be epidemiologically related to typical cases, and in these the diagnosis would not be made without such obvious association. The clinical criteria of influenza are quite indefinite, particularly in absence of widespread prevalence of the disease. Microscopic or other laboratory procedures are of no practical value in determining or excluding the diagnosis of influenza.
2. *Etiological agent.*—A filterable virus has been isolated in certain epidemics.
3. *Source of infection.*—Probably discharges from the mouth and nose of infected persons and articles freshly soiled by such discharges.
4. *Mode of transmission.*—Believed to be by direct contact, by droplet infection, or by articles freshly soiled with discharges of the nose and throat of infected persons.
5. *Incubation period.*—Short, usually 24 to 72 hours.

6. *Period of communicability.*—Undetermined; possibly in prodromal as well as in the febrile stage and convalescent stages.
7. *Susceptibility and immunity.*—Susceptibility is general, although natural resistance or relative immunity appears to protect from one-quarter to three-quarters of persons intimately exposed to the disease even during widespread epidemics. Acquired immunity resulting from an attack of and recovery from the disease is of short duration (a few months to a year) perhaps effective only against a certain strain or strains of the virus.
8. *Prevalence.*—Uncertain in pandemic, local epidemic, and sporadic occurrence, by reason of indefinite clinical symptoms. In epidemics may affect up to 50 percent of the population. Occurs pandemically in cycles with intervals of several decades.
9. *Methods of control:*
   A. Premises not placarded.
   B. The infected individual, contacts, and environment:
      1. Recognition of the disease and reporting: By clinical symptoms only. Uncertain in interepidemic periods.
      2. Isolation: During acute stage of the disease, especially in severe cases and those complicated by pneumonia.
      3. Concurrent disinfection: Discharges from the nose and throat of the patient.
      4. Terminal disinfection. None.
      5. Quarantine: None, but visiting the patient should be discouraged.
      6. Immunization: None.
      7. Investigation of source of infection: Of no practical value.
   C. General measures:
      1. During epidemic efforts should be made to reduce opportunities for direct contact infection, as in crowded halls, stores, and street cars. Kissing, the use of common towels, glasses, eating utensils, or toilet articles should be avoided. In isolated towns and institutions infection has been delayed and sometimes avoided by strict exclusion of visitors from already infected communities. The closing of the public, parochial, and private schools has not been effective in checking the spread of infection. The judicious use of masks by nurses and other attendants may prove of value in preventing infection in hospitals. Scrupulous cleanliness of dishes and utensils used in preparing and serving foods in public eating places should be required, including the subjection of such articles to disinfection in hot soap suds. In groups which can be brought under daily professional inspection, the isolation of early and suspicious cases of respiratory tract inflammation, particularly when accompanied by a rise in temperature, may delay the spread of the disease. To minimize the severity of the disease, and to protect the patient from secondary infections and thus reduce mortality, patients should go to bed at the beginning of

an attack, and not return to work without the approval of their physician. Appropriate chemotherapy should be instituted at once if evidence of secondary pneumonia appears.

2. Large aggregations of young adults unaccustomed to such association create a danger of spread of influenza when it is prevalent, especially when the individuals are subjected to chilling, much fatigue, or deprivation of customary bodily comforts.
3. Crowding of beds in hospitals and institutions to accommodate increased numbers of patients and other inmates is to be especially avoided. Increased spacing between beds in wards and dormitories should be carried out to reduce the risk of attack, and of the occurrence of pneumonia.

Kerato-Conjunctivitis, Infectious (Superficial Punctate Keratitis Nummular Keratitis)

1. *Recognition of the disease.*—Acute onset usually with sensation as of foreign body under the upper lid. Edema of lids, scleral injection, follicular hypertrophy of palpebral conjunctiva, enlargement and tenderness of preauricular lymph node with a watery discharge, followed in few or many of the cases of multiple pin-point corneal opacities. Involvement usually unilateral.
2. *Etiological agent.*—Considered to be a specific filterable virus.
3. *Source of infection.*—Probably the discharge from the eye of an infected person or a carrier.
4. *Mode of transmission.*—Apparently contact with an infected person or carrier or with articles freshly soiled with discharges of such person.
5. *Incubation period.*—Not definitely established but probably about 5 days.
6. *Period of communicability.*—Unknown but certainly during acute stage of the disease.
7. *Susceptibility and immunity.*—Susceptibility variable. No age, sex, or race known to be immune.
8. *Prevalence.*—Occurs in epidemic form in warm climates, also among industrial employees in temperate climates involving a small percentage of the individuals in the groups affected.
9. *Methods of control:*
   - A. Premises not placarded.
   - B. The infected individual, contacts, and environment:
     1. Recognition of the disease: Clinical course confirmed by smears of conjunctival scrapings showing mononuclear cells and none of the usual etiologic agents of other forms of conjunctivitis.
     2. Isolation: None, provided hygienic measures are taken by the infected person.
     3. Concurrent disinfection: Disinfection or destruction of conjunctival and nasal discharges and articles soiled therewith.
     4. Terminal disinfection: None.
     5. Quarantine: None.
     6. Immunization: None.

7. Investigation of source of infection: To locate other cases and institute precautions at home or working place.

C. General measures:
1. Education as to personal cleanliness and as to danger of use of common towels and toilet articles.
2. Avoidance of contact of hands with conjunctival or nasal discharges.

Leprosy

1. *Recognition of the disease.*—The disease is to be identified by lesions of the skin and mucous membranes and by neurological manifestations. Confirmation by microscopic examination is usually possible in cutaneous and mixed types of the disease but may be difficult or impossible in maculo-anesthetic and neural cases.
2. *Etiological agent.*—Leprosy baccillus, *Mycobacterium leprae.*
3. *Source of infection.*—Discharges from lesions.
4. *Mode of transmission.*—Intimate and prolonged contact with infected individuals and some other as yet undetermined factor are apparently necessary.
5. *Incubation period.*—Prolonged, undetermined, from 1 to several years.
6. *Period of communicability.*—Commences when lesion becomes open, i.e., discharges leprosy bacilli; continues until healing. Patients with demonstrable acid-fast bacilli in smears from skin or mucous membranes are potentially "open" cases even if demonstrable ulceration be not present. Communicable only in certain geographic areas; in continental United States notably in states bordering on the Gulf of Mexico.
7. *Susceptibility and immunity.*—Susceptibility uncertain; no racial immunity.
8. *Prevalence.*—Endemic in some Gulf coast areas, Hawaii, Philippines, and Puerto Rico. Sporadic in North America and rare. Oftener among adolescent and young adult males.
9. *Methods of control:*

A. Premises not placarded.

B. The infected individual, contacts, and environment:
1. Recognition of the disease and reporting: Clinical symptoms confirmed by microscopic examination where possible.
2. Isolation: Isolation of bacteriologically positive cases occurring in endemic form in national leprosarium until a condition of apparent arrest has been present for at least 6 months, as determined by clinical observation and absence of acid-fast bacilli on repeated examinations. Paroled and other negative patients should be reëxamined periodically, the suggested interval being 6 months.
3. Concurrent disinfection: Discharges and articles soiled with discharges.
4. Terminal disinfection: Thorough cleaning of living premises of patient.
5. Quarantine: None.

6. Immunization: None.
7. Investigation of source of infection: This should be undertaken especially in cases of apparently recent origin. The long and uncertain period of incubation, and the length of intimate contact believed to be necessary, make the discovery of the source of infection a matter of great difficulty.

C. General measures:

1. In endemic areas leprosy is usually contracted in childhood but it may be acquired in adult life. Infants should be separated from leprous parents at birth, and in educational efforts stress should be placed upon the greater risk of exposure in early life.
2. Lack of information as to the determining factors in the spread and communication of the disease makes any but general advice in matters of personal hygiene of no value.
3. As a temporary expedient, patients may be properly cared for in general hospitals, or if conditions of the patient and his environment warrant, he may be allowed to remain on his own premises under suitable regulations.
4. In those parts of the United States in the temperate zone farther north where the disease shows no tendency to spread, suitable medical and nursing care of infected persons is sufficient.

Lymphogranuloma Venereum (Inguinale) and Climatic Bubo

1. *Recognition of the disease.*—Adenopathy, inguinal in male, pelvic in female, and history of exposure to venereal infection in tropics (climatic bubo) or in temperate climates. Natural infection limited to human beings, but experimentally transmissible to monkeys and mice, less readily to other species. Characterized by small herpetiform lesion of inoculation on external genitalia or uterine cervix (rarely in mouth), usually transitory, followed by subacute or chronic adenitis and periadenitis, usually with multiple foci of suppuration; frequently the cause of rectal stricture. Associated with constitutional symptoms, fever, prostration, loss of weight, rheumatic affections, and skin reactions. Clinical diagnosis may be confirmed by Frei antigen intradermal test, but not uniformly.
2. *Etiological agent.*—A specific virus.
3. *Source of infection.*—Discharges from lesions.
4. *Mode of transmission.*—Direct contact by skin and mucous membranes, almost exclusively in sexual relations with infected persons, or indirectly by articles soiled with discharges from the lesions of such persons.
5. *Incubation period.*—One to four weeks. Glandular enlargement follows the initial lesion in 1 or 2 weeks.
6. *Period of communicability.*—As long as there are open lesions upon skin or mucous membranes.
7. *Susceptibility and immunity.*—Susceptibility appears to be general. Immunity apparently does not follow an attack of the disease. There is no artificial immunity.

8. *Prevalence.*—A common venereal infection in the Negro quarters of cities in the United States. Widely prevalent in the tropics and common among inmates and clients of brothels in seaports.
9. *Methods of control:*
   A. The infected individual, contacts, and environment:
      1. Recognition of the disease and reporting: Clinical symptoms.
      2. Isolation: Exclusion of infected person from sexual contacts and from preparation and serving of food during period of communicability.
      3. Concurrent disinfection: Discharges and articles soiled therewith.
      4. Terminal disinfection: None.
      5. Quarantine: None.
      6. Immunization: None.
      7. Investigation of source of infection: Search should be made for case of origin, particularly among prostitutes and among persons of Negro race, and among former residents of tropical and subtropical areas.
   B. General measures:
      1. Education in matters of sexual hygiene, particularly as to the fact that continence in both sexes and at all ages is compatible with health and normal development.
      2. Repression of commercial prostitution and associated use of alcoholic beverages by use of police and other competent authority and control of living premises.
      3. Elimination of the use of common towels, cups, toilet articles, and eating utensils.
      4. Personal prophylaxis should be advised and made available for use immediately after sexual intercourse to those who expose themselves to opportunity for infection.

Malaria

1. *Recognition of the disease.*—A group of specific infectious fevers due to invasion of the red blood cells by one of at least three types of Sporozoa of the genus *Plasmodium*. These fevers occur endemically or epidemically and are associated with a symptom complex fairly characteristic of each variety, marked particularly by periodicity of fever and symptoms due to the growth and development of the organism. Enlargement of the spleen, secondary anemia, and the characteristic recurrence of chills and fever as clinical findings are confirmed by observing presence of the malaria parasites in blood film on microscopic examination. Mosquitoes of the anopheline family are the only known vectors.
2. *Etiological agent.*—The several species of micro-organisms: *Plasmodium vivax* (tertian), *Plasmodium malariae* (quartan), *Plasmodium falciparum* (estivo-autumnal).
3. *Source of infection.*—The blood of an infected individual.
4. *Mode of transmission.*—By bite of the infected *Anopheles* mosquitoes. The mosquito is infected by biting an individual suffering from acute or chronic malaria. The parasite develops in the body of the mosquito for

from 10 to 14 days (21 days for quartan), after which time the sporozoites appear in its salivary glands. The disease may be transmitted by blood transfusion or by injecting whole human blood; also by common use of unsterilized hypodermic syringe (as by drug addicts).

5. *Incubation period.*—Varies with the type of species of infecting micro-organism and the amount of infection, usually 14 days in the tertian variety.
6. *Period of communicability.*—As long as the sexual form of the malaria micro-organism exists in the circulating blood in sufficient quantities to infect mosquitoes. In untreated cases this may last for months.
7. *Susceptibility and immunity.*—Susceptibility is universal, although the symtoms of an attack in a Negro are usually less severe than in a white person. Some relative immunity appears to follow repeated attacks of the disease, presumably because the immunity finally covers all of the local strains of the species involved; these attacks confer no immunity to infection with another species of plasmodium, and only slight immunity to a newly introduced strain of the same species. A state of good nutrition is believed to be a factor in maintaining resistance to the disease and in spontaneous recovery.
8. *Prevalence.*—Endemic and sporadic, more frequent among children than adults, among Negro children more than among white children. Particularly prevalent in the southeast coastal plain, Mississippi Valley south of St. Louis, in eastern Texas and Oklahoma, central New Mexico, in Louisiana and Arkansas, and slightly in California and Oregon. Serious in Puerto Rico and the Philippines. Seasonal occurrence of tertian types in early summer, estivo-autumnal and tertian in early fall. Usually rises to a sharp peak about every seven years and slowly but progressively falls thereafter. Epidemic outbreaks more common during peak years. The disease accompanies newly impounded waters in the Mississippi valley and Atlantic seaboard.
9. *Methods of control:*
   - A. Premises not placarded.
   - B. The infected individual and environment:
     1. Recognition of the disease and reporting: Clinical symptoms, always to be confirmed by microscopical examination of the blood. Repeated examination of blood films may be necessary.
     2. Isolation: The individual with malarial parasites in his blood should be protected from the bites of mosquitoes. With the exception of this simple precaution, isolation and quarantine are of no avail.
     3. Concurrent disinfection: None. Destruction of *Anopheles* mosquitoes in the dwelling.
     4. Terminal disinfection: None. Destruction of *Anopheles* mosquitoes in the dwelling.
     5. Quarantine: None.
     6. Immunization: None. The administration of prophylactic doses of quinine or atabrine should be insisted on for visitors con-

stantly exposed to infection and unable to protect themselves against *Anopheles* mosquitoes. This is not in an exact sense prophylaxis but early therapeusis.

7. Specific therapy: Quinine sulfate is preferred for routine treatment and atabrine is found by some to be equally reliable. Small daily doses of plasmochin appear to lower the relapse rate.
8. Investigation of source of infection: Breeding places and house infestation by *Anopheles* mosquitoes should be sought for and larvae and mosquitoes destroyed when and where possible. Dissection of house-caught mosquitoes reveals which of the species found is the important vector. The breeding places of this particular species should be located and its reproduction prevented.

C. General measures:

1. *Employment of known measures for destroying larvae of anophelines and the eradication of breeding places of such mosquitoes.*
2. Blood examination of persons living in infected center to determine the incidence of infection.
3. *Screening sleeping and living quarters; use of mosquito nets.*
4. Killing mosquitoes in living quarters.
5. Education of the public as to the mode of spread and methods of prevention of malaria.
6. Adequate curative treatment of persons with clinical attacks of malaria.

Measles (Rubeola)

1. *Recognition of the disease.*—Clinical characteristics are fever, catarrhal symptoms in eyes and nose and throat in the prodromal stage, as well as at the height of the disease, an early eruption in the mouth, Koplik spots, later an exanthem and enanthem, and a branny desquamation during convalescence. When the disease is prevalent, or a susceptible child has been exposed to a case of measles, the diagnosis should be suspected on appearance of the fever and catarrhal symptoms, without waiting for confirmatory eruptions, and isolation precautions should be instituted at once.
2. *Etiological agent.*—A specific filterable virus.
3. *Source of infection.*—Buccal and nasal secretions of an infected individual.
4. *Mode of transmission.*—Directly from person to person; indirectly through articles freshly soiled with the buccal and nasal discharges of an infected individual. The most easily transmitted of the communicable diseases.
5. *Incubation period.*—About 10 days from date of exposure to onset of fever; 13 to 15 days to appearance of rash; uncommonly longer or shorter. When convalescent serum has been used, but too late to prevent infection, the incubation period may be as long as 21 days.
6. *Period of communicability.*—During the period of catarrhal symptoms and until the cessation of abnormal mucous membrane secretions; minimum

period of 9 days: from 4 days before to 5 days after the appearance of the rash.

7. *Susceptibility and immunity.*—All persons must be considered susceptible until they have had the disease, except that most babies born of mothers who have had the disease are immune for the first few months of life. Natural immunity may last into adult life in rare instances. Permanent acquired immunity is usual after recovery from an attack. Passive immunity may be established for a few weeks, but not more than 4, by the use of 4 to 10 cc. of convalescent measles serum or 20 to 50 cc. of whole blood of immunes, or if citrated blood is used, 25 to 60 cc. Serum of immunes may be concentrated, or immune globulin may be used.

8. *Prevalence.*—Universal. Probably 80 to 90 percent of all persons surviving to the twentieth year of life have had an attack, and rarely does a person go through life without having had measles. Occurs most commonly in children between 5 and 14 years of age, but many cases are in children under 5. Endemic in large population units. In remote or insular groups epidemics occur on contact with a case in a visitor. Highest incidence from March to June in North America. Frequency of epidemics depends on size of community or proximity to a large center, amount of communication between large and small population groups, accretion of population by births, and other less exactly determined factors. Much more likely to result in death from complicating pneumonia in children under 2 than at higher ages.

9. *Methods of control:*

   A. Premises not placarded.

   B. The infected individual, contacts, and environment:

      1. Recognition of the disease and reporting: Clinical symptoms. Special attention to rise of temperature, Koplik spots and catarrhal symptoms in exposed individuals.
      2. Isolation: The patient must be excluded from school and public places. The patient must be isolated for a minimum of five days after appearance of eruption.
      3. Concurrent disinfection: All articles soiled with the secretions of the nose and throat.
      4. Terminal disinfection: Thorough cleaning.
      5. Quarantine: When the disease is very prevalent and in large communities, quarantine of exposed susceptible children is impracticable and of no value. Exclusion of exposed susceptible school children and teachers from school until 14 days from last exposure may be justifiable under sparsely settled rural conditions. This applies to exposure in the household. Exclusion of exposed susceptible children from all public gatherings under the same conditions for the same period. If the date of only exposure is reasonably certain, an exposed susceptible child of school age may be allowed to attend school for the first 7 days of the incubation period. Quarantining of institutions of young children and of wards or dormitories where exposure is suspected is of value. Strict quar-

antine wards of infants if a case occurs in an institution is important.

6. Immunization: By the use of the serum or whole blood of convalescent patients, or of any healthy adults who have had measles, or by the use of immune globulin, given within 5 days after first exposure to a known case of measles, the attack in the exposed person may be averted in a considerable percentage of instances; if not averted, the disease may be modified. Given later, but a time prior to the clinical onset of the disease, convalescent serum usually modifies the severity of the attack and the patient probably acquires the usual lasting immunity to the disease.
7. Investigation of source of infection: Search for exposed susceptible children under 3 years of age is profitable. Carriers are not known to occur. Every effort should be made to have all cases reported early in the disease by the physician, or, if there is none in attendance, by parent or guardian. The chief object of discovering cases is to give all possible protection to the very young or debilitated against infection, to administer passive immunization if practicable, and to secure adequate medical care for those infected.

C. General measures:

1. Daily examination of exposed children and of other possibly exposed persons. This examination should include record of the body temperature. A nonimmune exposed individual exhibiting a rise of temperature of 0.5° C. or more should be promptly isolated pending diagnosis.
2. Schools should not be closed or classes discontinued. Local health authorities or school authorities, when measles is epidemic, shall observe all children each day for any signs of illness; exclude children from school, who show any signs or symptoms of the disease, and notify the local health authorities of suspicious cases.
3. Education as to special danger of exposing young children to those exhibiting fever and acute catarrhal symptoms of any kind particularly during years and seasons of epidemic prevalence of measles.
4. In institutional outbreaks, immunization with convalescent serum of all minor inmates who have not had measles is of value in checking the spread of infection and in reducing mortality. No new admissions and no visitors under 16 years of age should be permitted in an institution for children, during a measles outbreak in the community or in the institution.
5. Parents should keep all infants and children under five years of age away from possible contact with other children, when measles is prevalent, and guard patients against secondary pneumonia.
6. Convalescent serum or parents' immune serum or immune globulin should be given to exposed children to prevent or modify

the disease. This is especially recommended for infants, very young children and children in a family, where there is a case of tuberculosis.

Meningococcus Meningitis (Cerebrospinal Fever)

1. *Recognition of the disease.* An acute infectious disease with sudden onset, fever, headache, nausea, rigidity of neck, and in epidemics not infrequently petechial spots on the skin. The specific microörganism in one of its several types may in some cases be found in the early stages by blood culture, and usually during the course of the disease in the spinal fluid, and in the discharges of the retronasal surfaces. The disease occurs in epidemic and sporadic manner.
2. *Etiological agent.*—Meningococcus, *Neisseria intracellularis.*
3. *Source of infection.*—Discharges from the nose and mouth of infected persons. Clinically recovered cases, and healthy persons not known to have had the disease but recently in contact with cases or other carriers, may act as carriers and are commonly found, especially during epidemics. Such healthy carriers are found independent of epidemic prevalence of the disease, even up to 5 to 10 percent of a general population.
4. *Mode of transmission.*—By direct contact with infected persons and carriers and indirectly by contact with articles freshly soiled with the nasal and mouth discharges of such persons.
5. *Incubation period.*—Two to ten days, commonly seven; tends to be short in epidemics; in rare instances the period may be longer when a carrier develops the disease.
6. *Period of communicability.*—During the clinical course of the disease and until the specific microörganism is no longer present in the nasal and mouth discharges of the patient. The same applies to healthy carriers as far as persistence of infectious discharges is concerned. Readily communicable in crowded living conditions among persons of lowered resistance.
7. *Susceptibility and immunity.*—Susceptibility is limited. Acquired immunity from having had the disease, apart from immediate clinical relapses, may be of long duration but is uncertain. There is no artificial immunity. Resistance to infection appears to be low when those exposed to crowded conditions of living are also fatigued and ill fed.
8. *Prevalance.*—Usually low incidence of sporadic cases. Within a community in epidemics at long but irregular intervals. The cases are mostly in children and in young adults, but occur at all ages. Local epidemics commonly related to chronic or emergency overcrowding of living quarters, as in ships, barracks, and lodging houses or slums, and usually in the winter or spring. No limitations in geographical distribution.
9. *Methods of control:*
   A. The premises shall be placarded.
   B. The infected individual, contacts, and environment.
      1. Recognition of the disease and reporting: Clinical symptoms confirmed by the microscopic and bacteriological examination

of the spinal fluid, and by the bacteriological examination of nasal and pharyngeal secretions.

2. Isolation of infected persons until 14 days after onset of the disease or until negative swabs are obtained from the nasopharynx.
3. Concurrent disinfection: Of discharges from the nose and mouth or articles soiled therewith.
4. Terminal disinfection: Cleaning.
5. Quarantine: The case shall be quarantined for at least two weeks from date of onset and until complete clinical recovery. Patient shall be isolated in a separate room and no one except the nurse and attending physician shall come in contact with patient.
6. Immunization: None.
7. Investigation of source of infection: Impracticable.
8. Prompt treatment with an appropriate chemotherapeutic agent such as sulfadiazine or sulfanilamide, or a combination of serotherapy and chemotherapy, may be useful in limiting communicability.

C. General measures:

1. Education as to personal cleanliness and necessity of avoiding contact and droplet infection.
2. Preventoin of overcrowding such as is common in living quarters, transportation conveyances, working places, and especially in barracks, camps, and ships.

D. Epidemic measures:

1. Increase the separation of individuals and the ventilation in living and sleeping quarters for such groups of people as are especially exposed to infection because of their occupation or some necessity of living conditions. Chilling, bodily fatigue, and strain should be minimized for those especially exposed to infection.

Mumps (Infectious Parotitis)

1. *Recognition of the disease.*—An acute specific infection characterized by fever, swelling, and in tenderness of the salivary glands usually of the parotid, sometimes of the sublingual or submaxillary glands. Involvement of ovaries and testicles is most frequent in persons over puberty; rarely, involvement of the central nervous system is encountered early or later in the course of the disease.
2. *Etiological agent.*—A specific filterable virus.
3. *Source of infection.*—Secretions of the mouth and possibly of the nose.
4. *Mode of transmission.*—By direct contact with an infected person or with articles freshly soiled with the discharges from the nose and throat of such infected persons.
5. *Incubation period.*—From 12 to 26 days. The most common period, 18 days, accepted as usual. A period of 21 days is not uncommon.

6. *Period of communicability.*—Limits not definitely established, but probably beginning at least 1 to 2 days before development of distinctive symptoms and persisting no longer than the swelling of a salivary gland.
7. *Susceptibility and immunity.*—Susceptibility believed to be general. Immunity follows an attack but second attacks of the disease are not rare. Brief passive immunity may follow inoculation with convalescent serum or whole blood.
8. *Prevalence.*—This disease is decidedly less prevalent than the other common communicable diseases of childhood such as measles, whooping cough, and chickenpox. Winter and spring are the seasons of greatest prevalence. Its occurrence is sporadic and epidemic except in large cities, where it is endemic. Close aggregations of young people favor outbreaks.
9. *Methods of control:*
   A. Premises not placarded.
   B. The infected individual, contacts and environments: The following procedures are in common use but cannot be relied upon as means of effective control of the disease.
      1. Recognition of the disease and reporting: The diagnosis is usually made on swelling of the parotid gland.
      2. Isolation: Separation of the patient from nonimmune children and young children and young people, and exclusion of the patient from school and public places for the period of presumed infectivity, particularly when the disease appears in children's institutions or among young recruits. Contacts may remain in school if inspected daily. Exclude children on appearance of any symptoms of the disease.
      3. Concurrent disinfection: None.
      4. Terminal disinfection: None.
      5. Quarantine: None. Exposed susceptible persons should be regularly inspected for the presence of initial symptoms of the disease, such as fever, or swelling or pain of the parotid or submaxillary glands, for 3 weeks from the date of last exposure. Exposed children medically certified as having had the disease should not be excluded from school as susceptibles.
      6. Immunization: None. Passive temporary immunity by convalescent serum or blood still in experimental stage.
      7. Investigation of source of infection: Search for unreported or recent cases among associates of the patient in school or family or other group of young people. Carriers are not known to occur.
   C. General measures:
      1. School authorities shall be notified and instructed to observe all children carefully for 26 days after exposure for any signs of the disease, to exclude from school any children with suggestive symptoms, and to notify the local health authorities.

Paratyphoid Fever

1. *Recognition of the disease.*—A general infection with the paratyphoid bacillus characterized especially by continued fever and involvement of the lymphoid tissues of the intestines, enlargement of the spleen, and a variety of constitutional symptoms, sometimes rose spots on the trunk, usually diarrheal disturbance. The infecting micro-organism may be found in the feces, blood, and urine.*
2. *Etiological agent.*—Paratyphoid bacillus A, B, or C; *Salmonella paratyphi, Salmonella schoitmülleri, Salmonella hirschfeldii,* or any other Salmonella.
3. *Source of infection.*—Bowel discharges and urine of infected persons, and water or foods contaminated with such discharges of infected persons or of healthy carriers. Healthy carriers may be numerous in an outbreak.
4. *Mode of transmission.*—Directly by personal contact; indirectly by contact with articles freshly soiled with the discharges of infected persons or through milk, water, or food contaminated by such discharges, probably by flies.
5. *Incubation period.*—Four to ten days; average, seven days.
6. *Period of communicability.*—From the appearance of prodromal symptoms, throughout the illness and relapses, during convalescence, and until repeated bacteriological examination of discharges shows absence of the infecting organism.
7. *Susceptibility and immunity.*—Susceptibility is general. Natural immunity probably exists in some adults. Acquired immunity is usually permanent after recovery from the disease. Artificial active immunity of probably 2 years' duration can be developed by the use of vaccines.
8. *Prevalence.*—Frequency has fallen with that of typhoid fever until in most parts of North America it is relatively rare, occurring sporadically or in small local carrier or contact epidemics. Probably nowhere endemic in North America.
9. *Methods of control:*
   - A. The premises shall be placarded.
   - B. The infected individual, contacts, and environment.
     1. Recognition of the disease and reporting: Clinical symptoms confirmed by specific agglutination test, or by bacteriological examination of blood, bowel discharges, or urine.
     2. Isolation: In fly-proof room, preferably under hospital conditions, of such cases as cannot command adequate sanitary environment and nursing care in their homes.
     3. Concurrent disinfection: Disinfection of all bowel and urinary discharges and articles soiled with them.
     4. Terminal disinfection: Cleaning.
     5. Quarantine: None.
     6. Immunization: Of exposed susceptibles.
     7. Investigation of source of infection: Search for common source in polluted water, milk, shellfish or other food, and individual sources as unreported cases and carriers.

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* The human disease paratyphoid fever should not be confused with cases of food poisoning or with infection due to enteritidis bacilli of animal origin.

C. General measures:

1. Protection and purification of public water supplies.
2. Pasteurization of public milk supplies.
3. Limitation of collection and marketing of shellfish to those from approved sources.
4. Supervision of other food supplies, and of food handlers.†
5. Prevention of fly breeding.
6. Sanitary disposal of human excreta.
7. Extension of immunization by vaccination to persons especially subject to exposure by reason of occupation and travel, to those living in areas of high endemic incidence of typhoid fever, and to those for whom the procedure can be systematically and economically applied, as military forces and institutional populations, depending on prevalence of the disease.
8. Discovery and supervision of paratyphoid carriers and their exclusion from the handling of foods.
9. Exclusion of suspected milk supplies on epidemiological evidence pending discovery and elimination of the personal or other cause of contamination of the milk.
10. Exclusion of suspected water supplies until adequate protection or purification is provided unless all water used for toilet, cooking, and drinking purposes is boiled before use.

Plague, Bubonic, Septicemic, Pneumonic

1. *Recognition of the disease.*—An acute infection running a rapid severe course, often terminating fatally, and characterized by extreme weakness, high fever, buboes, severe general symptoms, and sometimes accompanied by subcutaneous hemorrhage and postules. The infecting micro-organism is regularly found in the buboes and skin lesions, and in the pneumonic type of the disease in the sputum. Pneumonic plague gives the picture of a virulent septic pneumonia.
2. *Etiological agent.*—Plague bacillus, *Pasteurella pestis.*
3. *Source of infection.*—Blood of infected rodents and, in the pneumonic form, the sputum of human cases. The primary or indigenous source of the disease is the so-called "sylvatic plague," the animal reservoir among such rodents as the tarbigan of Manchuria, and the ground squirrel and other rodents of the United States. Infection may reach man from these sources, or more often through the medium of the rat.
4. *Mode of transmission.*—Direct, in pneumonic form. In other forms the disease is generally transmitted by the bites of fleas (*Xenopsylla cheopis* and *Ceratophyllus fasciatus*), by which the disease is carried from rats to man, also by fleas from other rodents. Accidental, by inoculation.
5. *Incubation period.*—Commonly from 3 to 7 days, although occasionally prolonged to 8 or even 14 days.

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† It is not assumed that an entirely effective supervision of all food handlers can be achieved or would be administratively justified by results in view of the cost. Food handlers to whom epidemiological evidence points as carriers should be brought under control of the health department.

6. *Period of communicability.*—Pneumonic type intensely communicable during acute symptoms. Bubonic type not communicable from person to person.
7. *Susceptibility and immunity.*—Susceptibility is general, particularly to the pneumonic form. Natural immunity may exist but is rare. Lasting immunity almost always results from recovery from an attack of the disease. Artificial passive immunity of about 3 to 4 weeks' duration by antiplague serum, and active immunity of about 6 months' duration by vaccines may be relied upon.
8. *Prevalence.*—Very rare in North America and insular possessions, and only sporadic cases, from exposure to infection in ground squirrels and other rodents in Pacific and Mountain States. Endemic in ground squirrels in large areas as far east as Montana, Utah, and New Mexico. Occasionally found in rats trapped at seaports.
9. *Methods of control:*
   A. The infected individual, contacts, and environment:
      1. Recognition of the disease and reporting: Clinical symptoms, confirmed by bacteriological examination of blood, pus from glandular lesions, or sputum. Animal inoculation of material from suspected cases. Investigation of all deaths during epidemics with autopsy and laboratory examination when indicated.
      2. Isolation: Patient in hospital if practicable; if not, in a screened room which is free from vermin.‡
      3. Concurrent disinfection: Sputum and articles soiled therewith, in pneumonic type of the disease.
      4. Terminal disinfection: Thorough cleaning followed by fumigation to destroy rats and fleas. Handling of the bodies of persons dying of plague under strict antiseptic precautions.
      5. Quarantine: Contacts of pneumonic cases for 7 days.
      6. Immunization: Ordinarily not practicable.
      7. Investigation of source of infection: Search for human (in pneumonic) and rodent (in bubonic) sources to which patient is known to have been exposed, among wild rodents, and particularly the rat.
   B. General measures:
      1. Extermination of rats and vermin by use of known methods for their destruction; destruction of rats on ships arriving from infected ports; examination of rats, ground squirrels, etc., in areas where the infection persists, for evidence of endemic or epidemic prevalence of the disease among them.
      2. Ratproofing of buildings and elimination of breeding places and opportunities for the harboring and feeding of rats as a fundamental sanitary measure.
      3. Ratproofing of ships.

‡ In plague pneumonia, personal prophylaxis to avoid droplet infection must be carried out by persons who come in contact with the sick. Masks of closely woven cloth with mica windows should be worn over the head and to the shoulders. A long gown and rubber gloves drawn over the sleeves of the gown should be provided. These articles should not be removed from the sick room until disinfected.

Pneumonia, Acute Lobar

1. *Recognition of the disease.*—An acute infection characterized by sudden onset with chill followed by fever, often pain in the chest, usually cough and dyspnea. In many cases in children, vomiting and convulsions occur at the onset. Recognition of the infecting microörganism by microscopic and cultural examination is valuable. The x-ray may disclose pulmonary lesions prior to other evidence of pulmonary consolidation.
2. *Etiological agent.*—Various pathogenic bacteria commonly found in the nose, throat and mouth, such as pneumococcus. Friedlander's bacillus, influenza bacillus, staphylococcus, may cause lobar pneumonia. Pneumococci Types I to XXXII inclusive account for about 95 percent of the cases. *Streptococcus hemolyticus* produces an atypical pneumonia, interstitial in type, which may be confused with lobar pneumonia.
3. *Source of infection.*—Probably discharges from the mouth and nose of infected person or carrier and articles freshly soiled with such discharges.
4. *Mode of transmission.*—By direct contact with infected person or carrier, or with articles freshly soiled with the discharges of the nose and throat of such persons, and possibly from dust and minute suspended particles.
5. *Incubation period.*—Believed to be short, usually 1 to 3 days—not well determined.
6. *Period of communicability.*—Unknown; presumably until the discharges of the mouth and nose no longer carry the infectious agent in an abundant amount or in a virulent form.
7. *Susceptibility and immunity.*—Susceptibility is general, accentuated by wet and cold and exposure, and apparently under certain conditions by bodily and mental fatigue, and by alcoholism. Natural immunity may occur but is doubtful. Acquired immunity to the particular microörganism may follow an attack of pneumonia; such immunity is of short duration. Artificial immunization whether active or passive is of questionable value for prevention.
8. *Prevalence.*—Common, and affecting at one time or other, between adolescence and old age, a large proportion of the population. No race or color and neither sex is exempt from likelihood of having this disease. Occurs in all climates and seasons, but most often in winter and spring and in regions where cold, windy, changeable, and inclement weather prevails. Occurs in epidemic form, particularly in institutions for adults.
9. *Methods of control:*
   A. The infected individual, contacts, and environment:
      1. Recognition of the disease and reporting: Clinical symptoms. Specific infecting organisms may be determined by serological and bacteriological tests early in the course of the disease, which may give basis for epidemiological studies and for specific therapy.
      2. Isolation: Medical aseptic technique.
      3. Concurrent disinfection: Discharges from the nose and throat of the patient.
      4. Terminal disinfection: Thorough cleaning and airing.

5. Quarantine: None.
6. Prompt treatment with an appropriate chemotherapeutic agent such as sulfapyridine or sulfathiazole, or a combination of serotherapy and chemotherapy, may be useful in limiting communicability.

B. General measures:

1. Whenever practicable and particularly in institutions, barracks, and on shipboard, crowding in living and sleeping places should be avoided. The general resistance should be conserved by good food, fresh air, sufficient sleep, temperance in the use of alcoholic beverages, and other hygienic measures.

Poliomyelitis

1. *Recognition of the disease.*—An acute infection with moderate initial fever, usually headache and gastro-intestinal symptoms such as vomiting and constipation, drowsiness alternating with irritability, hyperesthesia, stiffness of neck and spine, usually accompanied by an increase in pressure and in the number of cells in the spinal fluid, tremor, and exaggeration of the muscular reflexes. Later, local diminution of reflexes and local motor weakness (paralytic). Any of these symptoms may be absent but the diagnosis of the cases which are not at some time paralytic is so frequently uncertain that only paralytic cases should be counted officially as poliomyelitis in comparing rates, due precautions being taken in the other cases. Paralysis may be sudden and cause death within a few hours of onset by cessation of respiration without clear-cut symptoms. There is a marked tendency for the paralysis to improve after it has reached its height.
2. *Etiological agent.*—A specific filterable virus.
3. *Source of infection.*—Nose and throat discharges of infected persons and carriers, or articles recently soiled therewith. Bowel discharges also contain the virus, but reliable evidence of spread by water supply is lacking. Unpasteurized milk is a rare source of infection.
4. *Mode of transmission.*—Not definitely known.
5. *Incubation period.*—Commonly 7 to 14 days.
6. *Period of communicability.*—Not definitely known, but apparently covered by the latter part of the incubation period and the first week or two of the disease—possibly much longer in a few cases.
7. *Susceptibility and immunity.*—Infants under one year of age are less frequently attacked than other young children. Children are more frequently susceptible than adults except in extremely isolated communities not previously reached by the infection. Immunity is usually high among adults who have lived in large cities, less among those in rural sections. An attack of the disease gives permanent immunity, as a rule. Second attacks are rare although they have been observed. Even during epidemics only one person in several hundred suffers a clinical attack of the disease.

8. *Prevalence.*—Infection occurs practically throughout the world, but cases are most frequent in the cooler part of the temperate zone, occurring both sporadically and in epidemics at irregular intervals, with the highest incidence in late summer and fall. Ten cases per 100,000 population per year is an ordinary incidence for the northern United States.

9. *Methods of control:*

   A. The premises shall be placarded. Case isolated in a separate room and no one except nurse or attendant shall come in contact with patient for two weeks from onset and until all abnormal discharges from nose and throat have entirely ceased.

   B. The infected individual, contacts, and environment:
      1. Recognition of the disease and reporting: Clinical symptoms, assisted by microscopical and chemical examination of the spinal fluid if lumbar puncture is performed.
      2. Isolation: For 2 weeks from onset. Almost invariably the period of restriction of visitors and care in bed desirable for the patient extends beyond the period of presumed communicability of the disease.
      3. Concurrent disinfection: Nose, throat, and bowel discharges, and articles soiled therewith.
      4. Terminal disinfection: None.
      5. Quarantine: Exposed children of the household of school age are to be kept from school, and adults of the household whose vocations bring them into contact with children or with food to be eaten uncooked are to be kept from such vocation for 14 days from last exposure to recognized case.
      6. Immunization: None.
      7. Investigation of source of infection: Search for and expert diagnosis of sick children to locate unrecognized and unreported cases of the disease.

   C. General measures during epidemics:
      1. General warning to physicians and the laity of the prevalence or increase of incidence of the disease, description of usual characteristics of onset, and necessity for diagnosis and medical care, particularly for bed rest of patients and protection of their muscles.
      2. All children with fever should be isolated pending diagnosis.
      3. Education in such technique of bedside nursing as will prevent distribution of infected discharges to others from cases isolated at home.
      4. Protection of children so far as practicable against unnecessary contact with other persons, especially those outside their own homes, during epidemic prevalence of the disease.
      5. Postponement of nose and throat operations on children in the presence of an epidemic.
      6. Avoidance of unnecessary physical strain in children during an epidemic or in case of known exposure.

Psittacosis

1. *Recognition of the disease.*—The clinical criteria are an onset with chilly sensations, fever, headache, early pneumonic involvement; cough absent or usually nonproductive at first, later usually present and productive; sputum light yellow and characterized by extreme viscosity; tongue, white coat; anorexia extreme; constipation the rule; pulse usually slow in relation to temperature; great prostration; delirium common; albuminuria almost constant; relapses not uncommon. The white blood count is normal or slightly increased early, with leucopenia later. The disease may be transmitted to mice by inoculating blood drawn during first week of illness; the diagnostic criteria are the characteristic pathological changes in mice with the presence of elementary bodies (Leventhal-Coles-Lillie) in impression smears from the spleens of mice; the sputum, if obtainable, is more uniformly infectious than the blood; repeated trials are necessary. Blood serum of recovered cases contains complement-fixing antibodies.
2. *Etiological agent.*—A specific filterable virus.
3. *Source of infection.*—Newly acquired parrots, parakeets, love birds, or canaries. Birds which are apparently well occasionally transmit the infection.
4. *Mode of transmission.*—Contact with infected birds or their recent surroundings. Occasionally through a human case.
5. *Incubation period.*—In human cases, 6 to 15 days.
6. *Period of communicability.*—Ill birds and their surroundings highly infectious for man; patients less dangerous. The period of communicability of human cases is during their acute illness, especially when coughing.
7. *Susceptibility and immunity.*—All ages susceptible, but the disease is more severe in the higher age groups. One attack confers immunity.
8. *Prevalence.*—Usually in sudden house outbreaks among persons exposed to ill tropical birds. Deaths mainly confined to persons over 30 years of age. Females more frequently attacked than males because of more frequent exposure. Case fatality 20 to 50 percent.
9. *Methods of control:*

   A. Premises placarded.

   B. The infected individual, contacts, and environment.

      1. Recognition of the disease and reporting.
      2. Isolation: Important during the febrile and acute clinical stage of the disease. When actually handling patients with a cough, nurses should wear gauze masks, 8 layers of 40 to 48 threads per inch, or 16 layers 20 to 24 threads per inch.
      3. Concurrent disinfection: Of all discharges.
      4. Terminal disinfection: Incriminated birds should be killed and their bodies immersed in 2 percent cresol. The spleens then should be aseptically removed, part placed in equal parts of sterile glycerin and standard phosphate buffer solution of pH. 7.5, and part in suitable fixative, and both specimens sent to the nearest available laboratory for examination. Carcasses should be burned before feathers dry.

5. Quarantine: Buildings which housed birds should be quarantined until thoroughly cleaned and disinfected.
6. Immunization: No demonstrated method yet fully accepted.
7. Investigation of source of infection: Important, in order to trace infected lots of birds. Though apparently healthy birds occasionally convey the disease, healthy human carriers are unknown.

C. General measures:

1. Strict regulation of traffic in birds of parrot family based on quarantine and laboratory examination, but prohibition of such traffic is preferable.
2. Quarantine of homes and pet shops known to have harbored infected birds until thoroughly cleaned.
3. Education of community in the danger of making house pets of birds of the parrot family, particularly when the birds have been recently imported or are of doubtful history as to contact with other and especially with sick birds of tropical origin.

Puerperal Infection (Puerperal Septicemia)

1. *Recognition of the disease.*—Rise of temperature and local and general symptoms of bacterial invasion of the genital tract of the postpartum patient. Bacteriological examination of discharges and surfaces of the vagino-uterine tract may identify the infecting organism. Blood culture is advisable to identify the organism definitely when invasion of the blood stream has occurred, because of the availability of chemotherapy against certain bacteria.
2. *Etiological agent.*—Usually a hemolytic streptococcus, staphylococcus, or other pus-forming micro-organism among those commonly found in the nose and throat, in infected wounds, and on the hands.
3. *Source of infection.*—The hands and instruments used in the examinations just prior to or during or following confinement; the nose and throat of the parturient woman or her attendants just prior to, during, or just after confinement; infectious processes and discharges of the genital tract prior to confinement.
4. *Mode of transmission.*—Direct transfer to the tissues of the parturient canal by hands, instruments, dressings, by droplets discharged in speaking, sneezing or coughing from infected or carrier individuals brought into close relation to the patient during or after delivery. Indirectly by articles soiled by infectious discharges brought into contact with the genital tract of the patient.
5. *Incubation period.*—One to three days; rarely longer.
6. *Period of communicability.*—Not communicable among parturient or postpartum cases except through the intermediate transmission of infection of attendants.
7. *Susceptibility and immunity.*—Terms not properly applicable. The chief factors of susceptibility are the state of the parturient canal during and after confinement, the state of exhaustion, or fatigue, or chilling, and loss of blood following delivery, and the exposure of mucous mem-

branes to trauma and contact in the course of the delivery. There is no immunity by artificial means except such as derived from care and cleanliness in the antepartum delivery, and postpartum care of the mother.

8. *Prevalence.*—The most common cause of preventable sickness and death related to childbearing.
9. *Methods of control:*
    1. Better education of physicians, nurses, and midwives in the science and art of midwifery.
    2. Strict asepsis in midwifery with especial attention to possibility of contamination by invisible spray from mouth and nose.
    3. Licensing and supervision of midwives where better attendance at childbirth cannot be provided.
    4. Official supervision or licensing of all institutions offering maternity services.
    5. Education of women in the hazards of self-interruption of pregnancy.

Rabies

1. *Recognition of the disease.*—In the human being this acute, specific, rapidly fatal infection may not be recognized until a spasm of deglutition appears, unless the earlier and mild constitutional symptoms such as an expression of anxiety, paresthesias especially in or near the wound, and some paralysis have been looked for after the bite of a rabid animal. In the dog or other animal, recognizable symptoms are any unexplained change in behavior followed by excitability or paralysis, and death within 10 days of onset of symptoms. Verification of cause of death may be established by discovery of Negri bodies in nerve cells of brain or cord, or by animal inoculation.
2. *Etiological agent.*—A specific filterable virus.
3. *Source of infection.*—Saliva of infected animals, chiefly dogs. The milk or meat of infected animals, such as cows, is not dangerous for human use.
4. *Mode of transmission.*—Inoculation of denuded tissue with saliva of infected animals, almost always by bites.
5. *Incubation period.*—Usually 2 to 6 weeks. May be prolonged to 6 months or even longer. Duration depends on virulence of saliva and on site of wound in relation to richness of nerve supply and directness of nerve path to brain.
6. *Period of communicability.*—For 15 days in the dog before the onset of clinical symptoms and through the clinical course of the disease. Rarely if ever communicable in man.
7. *Susceptibility and immunity.*—Susceptibility general. Natural immunity is not known to exist in man or among the animals subject to the disease. Prophylactic antirabic treatment of infected humans will prevent development of the disease with rare exceptions, if the treatment is begun soon after the injury and the site of the wound is not extensive in the distribution of the facial nerve.
8. *Prevalence.*—Rare in man; more likely to occur in males than females and most often in persons under 20 years of age. World-wide distribution.

Universally fatal in developed human cases. More prevalent among dogs and sometimes in wild carnivorous animals.

9. Methods of control:
   A. Premises not placarded.
   B. The infected individual, contacts, and environment:
      1. Recognition of the disease and reporting: Clinical symptoms, confirmed by the presence of Negri bodies in the brain of the animal which has caused the injury, and by animal inoculations with material from the brain of such animal.
      2. Isolation: None if the patient is under adequate medical supervision, and the immediate attendants are warned of possibility of inoculation by human virus.
      3. Concurrent disinfection of saliva of patient and articles soiled therewith.
      4. Terminal disinfection: None.
      5. Quarantine: None.
      6. Immunization: Therapeutic vaccination of the patient, after exposure to infection by actual inoculation with saliva. The possible chance of infection is to be weighed against the real but very small chance of developing paralysis due to the treatment, which may be fatal.
      7. Investigation of source of infection: Search for the rabid animal and for any animals bitten by it. Carriers in animals are not known to occur.
   C. General measures:
      1. Detention and examination of dogs suspected of having rabies.
      2. Immediate antirabic treatment of people bitten by dogs or by other animals suspected or known to have rabies, unless the animal is proved not to be rabid by subsequent observation or by microscopic examination of the brain and cord. The wound caused by any bite of a rabid animal should be treated at once to the depths with fuming nitric acid, with complete protection of the eye in the case of face bites.
      3. The animal inflicting the wound or suspected of being rabid should be immediately apprehended and placed under observation. A safe policy for health officers is to place under isolation and observation all dogs biting human beings.
      4. **Control of dog population by requiring annual license, provision for the impounding and the humane destruction of all unlicensed dogs, quarantine of all dogs in areas where rabid animals have run at large.**
      5. Preventive vaccination of dogs is still in the experimental stage.

Rat-Bite Fever (Sodoku)

1. *Recognition of the disease.*—Usually a history of rat bite within 2 weeks or more; primary edematous lesion; swelling of regional lymph nodes; sharp febrile paroxysms alternating with afebrile intervals and accompanied by a rash of broad maculo-papules; presence of causative microorganism in dark field preparations of blood of white mice, white rats,

and guinea pigs inoculated from patient's blood, primary lesion, lymph nodes, or skin macules, or (less frequently successful) in preparations other than blood direct from patient. Caution should be exercised lest the experimental mouse or rat is already naturally infected.

2. *Etiological agent.*—*Spirillum minus* (*Spirochaeta morsus-muris*).
3. *Source of infection.*—Usually bite of wild rat; rarely cat, weasel, ferret, dog, or bandicoot.
4. *Mode of transmission.*—During the bite, some of the animal's blood escapes from the injured or diseased buccal mucosa into the wound, or the conjunctival secretion of the rat may contaminate the wound. Blood from an animal in the laboratory may infect man.
5. *Incubation period.*—Three to thirty days or more; usually one to three weeks.
6. *Communicability.*—Not transmitted from man to man.
7. *Susceptibility and immunity.*—No data for man; fatality may reach 10 percent in untreated cases.
8. *Prevalence.*—Distribution is world-wide. Surveys in Calcutta, Bombay, and Tokyo have shown 10 percent of wild rats infected. In the United States less than 100 human cases have been reported up to 1940.
9. *Methods of control:*
   A. The infected individual, contacts, and environment:
      1. Recognition of the disease and reporting: Clinical symptoms are more uniformly definite than laboratory confirmation, but latter should always be attempted with thoroughness. Prompt cure by arsphenamines is of diagnostic value.
      2. Isolation: None.
      3. Concurrent disinfection: None.
      4. Terminal disinfection: None.
      5. Quarantine: None.
      6. Immunization: None.
      7. Investigation of source of infection: Not practicable except as suggested under general measures.

   B. General measures: Rat surveys and rat eradication. Avoidance of rat bites, especially by not sleeping on or near earthen floors or in rat-ridden communities and houses.

Relapsing Fever

1. *Recognition of the disease.*—Short febrile paroxysms lasting 2 or 3 days alternating with afebrile periods of 3 or 4 days; general macular eruption; presence of causative micro-organism in dark field preparations or stained films from patient's blood taken at height of a febrile paroxysm, or from blood of white mice, white rats, or monkeys inoculated with patient's blood at that time.
2. *Etiological agent.*—*Borrelia recurrentis* (*Spirocheta recurrentis,* formerly known as *Spirillum obermeieri*).
3. *Source of infection.*—The genus of ticks, *Ornithodoros,* of which *O. turicata* and *O. hermsi* are examples, is the important source of human infection

in the United States; *O. talaje* is a vector in Panama, Central and South America, while *O. moubata* is the vector in tropical Africa. Lice (*Pediculus vestimenti* and *P. capitis*) are the common vectors in Asia and Europe.

4. *Mode of transmission.*—By tick bite and louse bite.
5. *Incubation period.*—Up to 12 days, the average being 7.
6. *Communicability.*—On the American continent, only endemic foci are found, and spread from man to man is not apparent. Epidemics in Europe and Africa depend upon overcrowding and heavy infestation with lice and ticks.
7. *Susceptibility and immunity.*—Immunity is only partial. The case fatality for the European variety is about 4 percent. In India and Africa fatalities of 30 to 40 percent have been recorded, but no deaths have been reported for the United States.
8. *Prevalence.*—In the United States 258 cases were observed in Texas (1930-'34), 100 in California (1930-'35), and isolated cases in Colorado, Arizona, New Mexico, Idaho, Oregon, and Nevada.
9. *Methods of control:*
   - A. Premises not placarded.
   - B. The infected individual, contacts, and environment:
     1. Recognition of the disease and reporting: Clinical symptoms with laboratory confirmation; curative action of arsphenamines also confirmatory.
     2. Isolation: None.
     3. Concurrent disinfection: None.
     4. Terminal disinfection: None.
     5. Quarantine: None.
     6. Immunization: None.
     7. Investigation of source of infection: Important.
   - C. General measures:
     1. Tick and louse eradication.
     2. In endemic areas avoidance of sleeping in the open or in camps, especially near "dry cases" in Texas.

Rocky Mountain Spotted (or Tick) Fever

1. *Recognition of the disease.*—Sudden onset with fever, headache, photophobia, muscle and joint pains, and chills. Appearance of the characteristic maculo-papular rash, usually first on the extremities (third or fourth day of fever) and rapidly spreading to involve most of the body. History of either a tick bite or exposure to ticks. A positive Weil-Felix reaction appearing usually during the second week of the illness is a valuable confirmatory aid, though the reaction is not positive in all cases.
2. *Etiological agent.*—*Rickettsia, rickettsi,* a Gram-negative, nonfilterable, minute, intracellular micro-organism which has not been cultivated in the absence of living cells.
3. *Source of infection.*—Infected ticks.

4. *Mode of transmission.*—Bite of tick or contact with tick material such as its blood or feces on the unbroken skin.
5. *Incubation period.*—From 3 to about 10 days.
6. *Period of communicability.*—Not communicable from man.
7. *Susceptibility and immunity.*—Susceptibility general. One attack confers immunity which may or may not be permanent. Active artificial immunization by Spencer-Parker vaccine has given very encouraging results.
8. *Prevalence.*—Known to be widespread throughout the United States, western Canada, and several areas of South America. The season of occurrence is predominantly in the spring and early summer, corresponding to the appearance of adult ticks. The case fatality may vary considerably depending upon age (low in children) and upon the locality. For the whole United States it is about 20 percent.
9. *Methods of control:*

   A. Premises not placarded.

   B. The infected individual, contacts, and environment:
      1. Recognition of the disease and reporting: All cases of the disease should be reported to the health authorities.
      2. Isolation: None.
      3. Concurrent disinfection: All ticks on the patient should be destroyed.
      4. Terminal disinfection: None.
      5. Quarantine: None.
      6. Investigation of source of infection: Determination of areas where there are infected ticks should be attempted wherever practicable.

   C. General measures:
      1. Personal prophylaxis by avoidance of tick-infested areas when feasible, by careful removal of ticks from the person as promptly as possible, and by protection of the hands when removing ticks from animals.
      2. *The destruction of ticks by clearing and burning vegetation, and the destruction of small mammalian hosts of ticks in infested zones have been suggested.*

Scarlet Fever (Scarlatina)

1. *Recognition of the disease.*—Sudden onset with nausea, vomiting, fever, and sore throat; rash (bright red spots on subcuticular flush) on second or third day. Cases occur without eruption, when provisional diagnosis may be made on sore throat, fever, vomiting, and history of exposure. The Schultz-Charlton blanching phenomenon may be used when rash has recently appeared: one-tenth to one-half cc. convalescent serum or scarlet fever antitoxin is injected into skin where rash exists, which causes local blanching in 6 to 36 hours if rash is scarlatinal; absence of blanching, however, does not rule out scarlet fever.
2. *Etiological agent.*—A hemolytic streptococcus.

3. *Source of infection.*—Discharges from the nose, throat, ears, abscesses, or wound surfaces of sick or convalescent patients, and articles freshly soiled therewith. The nose and throat discharges of carriers may also spread the disease.
4. *Mode of transmission.*—Directly by contact with an infected person or carrier, indirectly by articles freshly soiled with discharges of an infected person or carrier, or through contaminated milk or milk products, not by skin desquamation.
5. *Incubation period.*—Two to seven days, usually three to four days.
6. *Period of communicability.*—Usually until 3 weeks from the onset of the disease, without regard to the stage or extent of desquamation, but until all abnormal discharges have ceased and all open sores or wounds have healed. Adults convalescent from scarlet fever appear to be less likely to transmit infection than are children. The infectious agent is more likely to be transmitted in colder seasons of the year.
7. *Susceptibility and immunity.*—Susceptibility to clinically recognized scarlet fever is not general, particularly among adults. Unnoticed infections occur. Immunity after an attack is usual but not invariable as second attacks occur. Artificial passive immunity of a few weeks may be developed by human convalescent serum. Artificial active immunity of uncertain duration can be developed in a considerable proportion of susceptible persons by the use of a suitable streptococcus antigen.
8. *Prevalence.*—Found in all parts of the world but unimportant in tropics and of low incidence in subtropical areas of North America. Commoner in urban than in rural areas. Most common in late winter and spring.
9. *Methods of control:*
   A. The premises shall be placarded.
   B. The infected individual, contacts, and environment:
      1. Recognition of the disease and reporting: By clinical symptoms.
      2. Isolation: Patients shall be isolated for a minimum period of twenty-one days from the onset and until all discharges from the nose, throat, ears, abscesses, and wounds have ceased, and terminal disinfection has been carried out.
      3. Concurrent disinfection: Of all articles which have been in contact with a patient and all articles soiled with discharges of the patient.
      4. Terminal disinfection: Thorough cleaning.
      5. Quarantine: Exclusion of exposed children and teachers from association with children, and food handlers from their work, until 7 days have elapsed since last exposure to a recognized case.
      6. Immunization: Passive immunization by the injection of human convalescent serum or scarlet fever antitoxin affords protection for about 12 days but such treatment of exposed persons is not warranted except under special circumstances and then only after making a Dick test to determine actual need. It is better to observe closely the exposed individual and reserve specific treatment until clinical signs develop. Active im-

munization of Dick-positive persons may be desired on a private basis but is generally impracticable as a public health measure.

7. Investigation of source of infection: The responsible authority should determine definitely whether some food is the common source (such as raw milk or milk products). In rural areas efforts to discover human sources of infection may be of value. Beyond this little can be done since present means are not practicable for the identification of infected persons and carriers of hemolytic streptococci capable of causing scarlet fever.

C. General measures:

1. Daily examination of exposed children and of other possibly exposed persons for a week after last exposure. Encourage removal of young susceptible contacts in the family to homes of adult friends for duration of communicable stage in the patient.
2. Schools should not be closed but rather daily inspection of the children and teachers by a physician or nurse should be provided.
3. In school and institutional outbreaks immunization of all exposed children with scarlet fever toxin may be advisable.
4. In the presence of a sharp outbreak, modified isolation of persons with sore throat or upper respiratory tract infection at least through the clinically active stage, particularly if exposure to scarlet fever patients be determined.
5. Education as to special danger of exposing young children to those exhibiting acute catarrhal symptoms of any kind.
6. Pasteurization of milk supply.

Schistosomiasis

1. *Recognition of the disease.*—History of skin contact with water known to contain the infected intermediate host followed by itching spots on the skin as the water dries. A few weeks later there is evidence of colitis or cystitis manifested by dysentery and hematuria, respectively, accompanied by leukocytosis and eosinophilio. This stage progresses and becomes complicated by cirrhosis and splenomegaly with ascites. Finding the ova in the stools or urine confirms the diagnosis. Massive larval infection may cause acute prostration and high fever.
2. *Etiological agent.*—Three species of schistosomes mature in man, *Schistosoma mansoni* in Central America, the West Indies, northern South America and Africa, *S. haematobium* in Africa and *S. japonica* in the Orient. The ova of these three flukes are spined and are deposited by the females into the abdominal venules from which they work their way to the mucosa of the bowel or bladder. None of these flukes is indigenous to the continental United States but they are found in Puerto Rico and the Philippines. The larvae of some other schistosomes found in the United States may cause "swimmer's itch" by penetrating the human skin. However, these schistosomes do not infect a man and the larvae die in the skin.

3. *Source of infection.*—Waters containing the intermediary snail host, contaminated by human excrement containing the ova of the parasite.
4. *Mode of transmission.*—Ova hatch in the water and enter the snail host. In the snail multiplication occurs and swimming larval forms called "cercariae" develop, which leave the snail and upon contact with skin, penetrate it to gain access to the blood stream.
5. *Incubation period.*—A dermatitis occurs at the time of penetration of the cercariae. At least one month, usually three, elapses after infection before the ova are found in the stools or in the urine.
6. *Period of communicability.*—As long as the ova are discharged in the stools of infected persons, and as long as the cercariae are to be found in the water. The ova hatch into free-swimming forms that are infectious only for the snail; cercariae are short-lived but infected snails give off cercariae for several months.
7. *Susceptibility and immunity.*—Susceptibility is general. There is no immunity.
8. *Prevalence.*—No autochtonous cases in the continental United States. Occurs in areas of the West Indies and northern South America; common in the Orient and Africa.
9. *Methods of control:*
   A. The infected individual, contacts, and environment:
      1. Recognition of the disease by symptomatology and microscopical examination of the stools or urine for ova.
      2. Isolation: None.
      3. Concurrent disinfection: Sanitary disposal of feces and urine.
      4. Terminal disinfection: None.
      5. Quarantine: None.
      6. Immunization: None.
      7. Investigation of source of infection: Important; examination of local waters for infected snails followed by a vigorous campaign to eliminate sources of pollution and snails from these waters.
   B. General measures:
      1. Regulation of disposal of sewage.
      2. Treatment of the infected persons by sodium antimony tartrate, fouadin, or other trivalent antimony compounds.
      3. Education of people in endemic areas regarding method of transmission. School children should be warned not to bathe in infected streams and persons whose occupation requires them to wade in infected waters should be cautioned and provided with suitable waterproof garments.

Septic Sore Throat

1. *Recognition of the disease.*—Acute sore throat appearing in epidemic outbreaks, often of a highly virulent character, and accompanied by various general septicemic manifestations. The onset is likely to be abrupt with chill, high temperature, and vomiting.

2. *Etiological agent.*—Streptococcus (hemolytic type).*
3. *Source of infection.*—The human nasopharynx, usually the tonsils, any case of acute streptococcus inflammation of these structures being a potential source of infection, including the period of convalescence of such cases. The udder of a cow infected by the milker is a common source of infection. In such udders the physical signs of mastitis may be absent.†
4. *Mode of transmission.*—Direct or indirect human contact; consumption of raw milk contaminated by case or carrier or from an infected udder.
5. *Incubation period.*—One to three days.
6. *Period of communicability.*—In man, presumably during the continuance of clinical symptoms; in the cow, during the continuance of discharge of the streptococci in the milk, the condition in the udder tending to a spontaneous subsidence. The carrier stage may follow convalescence and persist for some time.
7. *Susceptibility and immunity.*—Susceptibility general, but somewhat less in young children. Immunity, either natural or acquired, is uncertain, if it occurs at all.
8. *Prevalence.*—Usually in epidemics, in any geographic area except where milk supply is pasteurized. Most cases in adolescents and adult milk drinkers. Most often in spring and early summer, but may occur at any season.
9. *Methods of control:*
   A. Premises not placarded.
   B. The infected individual, contacts, and environment:
      1. Recognition of the disease and reporting: Clinical symptoms. Bacteriological examination of the lesions or discharges from the tonsils and nasopharynx may be useful.
      2. Isolation: During the clinical course of the disease and convalescence, and particularly exclusion of the patient from participation in the production or handling of milk or milk products.
      3. Concurrent disinfection: Articles soiled with discharges from the nose and throat of the patient.
      4. Terminal disinfection: Cleaning.
      5. Quarantine: None.
      6. Immunization: None.
      7. Investigation of source of infection: Search for cases and carriers among milkers and other handlers of unpasteurized milk, and for mastitis in milk cows.
   C. General measures:
      1. Exclusion of suspected milk supply from public sale or use until pasteurized. The exclusion of the milk of an infected cow or cows in small herds is possible when based on bacteriological examination of the milk of each cow, and preferably the milk

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NOTE: *Bovine mastitis of staphylococcus origin may lead to epidemic outbreaks of gastrointestinal disturbance in those who drink unpasteurized milk from a cow so infected.

† Mastitis in the cow, due to bovine streptococci, is not a cause of septic sore throat in human beings unless a secondary infection of the udder by a human type of streptococcus takes place.

from each quarter of the udder at frequent intervals. Exclusion of human cases or carriers from handling milk or milk products.

2. Pasteurization of all milk.
3. Education in the principles of personal hygiene and avoidance of the use of common towel, drinking and eating utensils.
4. In the absence of an epidemic, the milk of any cow with evidence of mastitis should be excluded from sale or use as a protection in addition to pasteurization.

Smallpox (Variola)

1. *Recognition of the disease.*—One to five days of febrile symptoms before the focal eruption, which is papular for 1 to 4 days, vesicular for 1 to 4 days, and pustular for 2 to 6 days, forming crusts which fall off 10 to 40 days after the first sign of the lesions, and leave pink scars which fade gradually. Unless scanty, the eruption is symmetrical and general, more profuse on prominences, extensor surfaces, and surfaces exposed to irritation, than on protected surfaces, flexures, and depressions. Most abundant and earliest on the face, next on forearms, wrists, and hands, favoring the limbs, especially distally, more than the trunk. More abundant on shoulders and chest than on loins or abdomen, but the lesions may be so few as to be overlooked. The individual lesions are deep-seated and have an infiltrated base, except when modified naturally or by previous vaccination. Any case of purpura or hemorrhage into the skin with fever should be treated with smallpox precautions until another diagnosis is clear.
2. *Etiological agent.*—A specific virus.
3. *Source of infection.*—Lesions of the mucous membranes and skin of infected persons.
4. *Mode of transmission.*—By contact with persons sick with the disease; this contact need not be intimate, but aerial transmission through more than a few feet is unlikely. By articles or persons contaminated by discharges of the sick, including feces and urine, but for a brief time.
5. *Incubation period.*—Eight to sixteen days, commonly twelve days. Cases with incubation period of 21 days are reported.
6. *Period of communicability.*—From first symptoms to disappearance of all scabs and crusts.
7. *Susceptibility and immunity.*—Susceptibility universal, but not every exposure of a susceptible person results in the disease. Acquired permanent immunity usually follows recovery from an attack of the disease. Second attacks are rare. Artificial immunity by vaccination is usually complete for 5 to 20 years, but relative susceptibility often occurs after 5 years.
8. *Prevalence.*—Distribution is sporadic or epidemic in form; varies widely according to the immunity status of the population of an area and its exposure to infection from without. Cases occur most often in young adult males. Occurrence is most frequent in the winter and least in summer months. There is no regional or climatic limitation to its prevalence except as population groups are more or less well protected by vaccination.

9. *Methods of control:*

A. The premises shall be placarded.

B. The infected individual, contacts, and environment.

1. Recognition of the disease and reporting: Clinical symptoms. The rapidly fatal or fulminating type and the very mild type may escape diagnosis until secondary cases appear.
2. Isolation: Hospital isolation in screened wards, free from vermin, until the period of infectivity is past.
3. Concurrent disinfection of all discharges. No article to leave the surroundings of the patient without boiling or equally effective disinfection.
4. Terminal disinfection: Thorough cleaning and disinfection of premises.
5. Quarantine: Isolation of all contacts until vaccinated with virus of full potency, and daily medical observation of these contacts until height of reaction is passed, if vaccination was performed within 24 hours of first exposure; otherwise for 16 days from last exposure.
6. Immunization: Vaccination. Only dermal vaccination with calf vaccine is recommended.
7. Investigation of source of infection: The immediate prior case should be sought industriously, and cases of reported chickenpox associated in time or place carefully reviewed for error of diagnosis. Active cases of the disease without remaining constitutional symptoms must be sought, also passive carriers recently in contact with cases, and exposed vaccinated persons who may have developed unrecognized forms of the disease, and thus be serving as sources of infection.

C. General measures:

1. General vaccination in early infancy, revaccination of children on entering a school, and of entire population when the disease appears in a severe form.
2. Preservation of smallpox vaccine below freezing up to the hour of vaccination. This includes shipment between cakes of dry ice.
3. In order to avoid possible complications of secondary and subsequent infections at the site of vaccination, it is important that the vaccination insertion be as small and superficial as practicable, not over one-eighth inch in any direction, and that the site be kept dry and cool. The use of shields or other dressings is to be condemned. The multiple pressure method is recommended. Primary vaccination within the first year of age is desirable. The time of vaccination should be adjusted to avoid skin lesions elsewhere on the body, and in older children to avoid the warmer months. Particular care should be used in primary vaccinations beyond the age of infancy. Previous immunity is not shown by the result of a vaccination unless a fully potent vaccine was used which had been kept continuously below freezing from the time of manufacture until the hour of use.

4. To prevent the spread of smallpox, the local board of health or health officer of any city or county where the disease is present in any school district or part thereof, which is included in such city or county, shall with the advice and consent of the State Board of Health (or its executive officer) prohibit the attendance at school in any such district or part thereof for a period of twenty-five days, after the appearance of smallpox, of any and all pupils and teachers who have not been successfully vaccinated. Should new cases of smallpox continue to develop in such school district or part thereof after the expiration of twenty-five days, the local board of health or health officer shall, upon the advice and consent of the State Board of Health (or its executive officer), renew such order for another period of twenty-five days or so many days thereof as the State Board of Health (or its executive officer) may deem necessary in order to control the epidemic.

Syphilis

(See Chapter XII—Venereal Diseases, Additional Rules and Regulations)

1. *Recognition of the disease.*—A disease acquired by intimate personal contact or by transmission in utero, running a chronic course with local and constitutional manifestations, usually in a definite sequence although of infinite variety. Confirmation of diagnosis is practicable and should be established in every instance by finding the spirochete in the lesions or discharges or by positive serological findings.
2. *Etiological agent.*—*Treponema pallidum* (*Spirochaeta pallida*).
3. *Source of infection.*—Discharges from the lesions of the skin and mucous membranes, the blood of infected persons, and articles freshly soiled with such discharges or blood in which the *Treponema pallidum* is present.
4. *Mode of transmission.*—By direct personal contact with infected persons and indirectly by contact with discharges from lesions or with the blood of such persons, by sexual intercourse chiefly, by kissing, by dental and other surgical or technical accidents, congenitally from syphilitic mother through the placenta.
5. *Incubation period.*—About 3 weeks, minimum 10 days, occasionally 6 weeks or longer.
6. *Period of communicability.*—As long as the lesions are open upon the mucous membranes or skin, but practically limited to the first 2 years of the disease, except for congenital transmission.
7. *Susceptibility and immunity.*—Natural or acquired immunity is not known to exist. Recovery from an attack does not protect against subsequent infection.
8. *Prevalence.*—Widespread in all regions of the world, regardless of race, climate, or geography, or of sex or age. Prevalence varies from less than one-half of 1 percent to 30 percent and over of local population groups, averaging probably about 1 percent of all the people of North America. Occurs in sporadic, local, or group epidemic, and commonly endemic

form. Most commonly acquired by unmarried males between 20 and 40 years of age. Occurs in about 3 percent of all pregnant women. Differences in racial incidence are related to social rather than biological factors.

9. *Methods of control:*

A. The infected individual, contacts, and environment:

1. Recognition of the disease and reporting: Clinical symptoms, confirmed by microscopical examination of discharges and by serum reactions. Treatment should never be instituted without laboratory confirmation.
2. Isolation: Essential for noncoöperative patients at least until surface lesions have healed. No person while in the communicable stage of syphilis should be permitted to engage in occupations of personal service in which he or she may infect others with syphilis, such as those of nurse or nursemaid, domestic servant, barber, hairdresser, chiropodist, manicurist, bath attendant, masseur, wet nurse. Sexual intercourse should be specifically warned against and so far as possible prevented for persons with syphilis until declared to be no longer in the communicable stage, by the physician responsible for treatment of the patient.
3. Concurrent disinfection of discharges and of articles soiled therewith.
4. Terminal disinfection: None.
5. Quarantine: Optional.
6. Immunization: None.
7. Investigation of source of infection: Each case, particularly those cases of presumably recent origin, as the congenital form of the disease in infants, and early cases of the acquired disease, should be traced to the probable source of infection, appropriate control and treatment of this spreader of disease instituted, and further exposed contacts examined for unsuspected or unreported cases.

B. General measures:

1. Provisions for accurate and early diagnosis with special attention to the prompt detection of infected persons, provision for their treatment to prevent open lesions during the first 2 years following their initial infection, due consideration for privacy of record consistent with effective control of the patient, and search for source of infection.
2. Education in matters of sexual hygiene, particularly as to the fact that continence in both sexes and at all ages is compatible with health and normal development.
3. Repression of commercial prostitution and associated use of alcoholic beverages, by the police or other competent authority.
4. Restriction of the advertising of services or medicines for self-treatment of sex diseases, and the prescribing of treatment by drug clerks.

5. Elimination of the use of common towels, cups, and toilet articles from public places.
6. Serological as well as clinical examination for syphilis should be part of the routine prenatal supervision of the expectant mother and if she is found to be infected, antisyphilitic treatment should be begun if possible before the end of the fifth month of pregnancy.
7. Routine serological blood tests should be employed as a part of every physical examination, particularly in the age group from 20 to 40 years.
8. Personal prophylaxis should be advised and be made available for use before or immediately after sexual intercourse to those who expose themselves to infection.

Tetanus

1. *Recognition of the disease.*—An acute infectious disease caused by the toxin of the tetanus bacillus; characterized by painful muscular contractions, primarily of the masseter and neck muscles, and secondarily of those of the trunk; rarely the rigidity is confined to the region of the injury. A history and usually physical evidence of a wound of entry for infection is found. Superficial suppuration under a gauze dressing or a crust provides sufficient anaerobiasis for the tetanus bacillus to develop. Bacteriological examination and mouse inoculation may be useful in confirmation of diagnosis.
2. *Etiological agent.*—Tetanus bacillus, *Clostridium tetani.*
3. *Source of infection.*—Soil, street dust, manure, and feces.
4. *Mode of transmission.*—Wound infection.
5. *Incubation period.*—Commonly 4 days to 3 weeks, dependent somewhat upon the character, extent, and location of the wound. Longer periods of incubation have been noted. Subsequent operative interference or local tissue changes may initiate the activity of quiescent bacilli at even lengthy intervals after the original wound infection.
6. *Period of communicability.*—Patient not infectious except in rare instances where wound discharges are infectious.
7. *Susceptibility and immunity.*—Susceptibility general, but inoculated bacilli often fail to produce toxin. Artificial passive immunity for about 10 days' duration can be relied upon from the use of tetanus antitoxin. An active immunity may be produced by the use of tetanus toxoid but this requires reinforcing doses at appropriate intervals and to meet particular exposures.
8. *Prevalence.*—World-wide distribution, following wound infection. Most frequent in North America among young males and in summer. Prevalent especially following wounds contaminated with manured soil.
9. *Methods of control:*

   A. The infected individual, contacts, and environment:
      1. Recognition of the disease and reporting: Clinical symptoms may be confirmed bacteriologically.
      2. Isolation: None.

3. Quarantine. None.
4. Immunization: Ordinarily a subcutaneous injection of tetanus antitoxin (1,500 units) given on the day of the wound. A second injection within 10 days may be desirable in certain instances. Previous active immunization with tetanus toxoid is preferable for those likely to be exposed to infection with tetanus.
5. Investigation of source of infection: Of only academic interest, as the infecting organism is widely spread, especially through animal feces, in all inhabited places.
6. Concurrent disinfection: None.
7. Terminal disinfection: None.

B. General measures:
1. Educational propaganda such as "safety first" campaign and "safe and sane Fourth of July" campaign.
2. Prophylactic use of tetanus antitoxin where wounds have been acquired in regions where tetanus is prevalent, and in all cases where contaminated material may be embedded in the wound.
3. Removal of all foreign matter as early as possible from all wounds.
4. Avoidance of dressings for smallpox vaccinations.

Trachoma

1. *Recognition of the disease.*—A specific destructive chronic inflammation of the conjunctiva, characterized by formation of granulations, either papillary or follicular, leading ultimately to formation of scar tissue, deformity of the eyelids, and involvement of the cornea. Microscopic examination of the conjunctival discharge and scrapings cannot be relied upon as an aid to diagnosis, but may exclude other infections.
2. *Etiological agent.*—A filterable virus.
3. *Source of infection.*—Secretions and purulent discharges from the conjunctivae and adnexed mucous membranes of the infected persons.
4. *Mode of transmission.*—By direct contact with infected persons and indirectly by contact with articles freshly soiled with the infective discharges of such persons.
5. *Incubation period.*—Undetermined.
6. *Period of communicability.*—During the persistence of lesions of the conjunctivae and of the adnexed mucous membranes or of discharges from such lesions.
7. *Susceptibility and immunity.*—Susceptibility is general, greater in children than in adults and increased by malnutrition, chronic irritation by dust, wind, exposure to the sun, and by carelessness of personal cleanliness. Natural or acquired immunity is not known to occur.
8. *Prevalence.*—Not uncommon in immigrants from southern and eastern Europe. Incidence high among mountain population of southern Appalachians, and in the Ozark regions of Missouri and Arkansas and to an extent of 5 to 25 percent among Plains and Pueblo Indians of the United States. In Canada the main focus is in southern Manitoba; rare in

white, native born Canadians; in Indians, cases are distributed from Ontario westward through the prairie provinces and into British Columbia. Cases most common among children but may occur and persist at any age.

9. *Methods of control:*

A. Premises not placarded.

B. The infected individual, contacts, and environment:

1. Recognition of the disease and reporting: Clinical symptoms.
2. Isolation: Exclusion of the patient from general school classes. Isolation of the patient is not necessary if he is properly treated and instructed in precautions against spread of secretions of the eye to others by common use of articles. The period of communicability apparently may be shortened by appropriate chemotherapy.
3. Concurrent disinfection of discharge and articles soiled therewith.
4. Terminal disinfection: None.
5. Quarantine: None.
6. Immunization: None.
7. Investigation of source of infection: Careful search should be made of persons in any way intimately related or exposed to the patient, particularly members of the household, and playmates and schoolmates. Carriers are not known to occur, but apparently healed scars of old lesions may be the site of reactivity and become sources of infection.

C. General measures:

1. Search for cases by examination of school children, or immigrants, and among the families and associates of recognized cases; in addition, search for acute secreting disease of conjunctivae and adnexed mucous membranes, both among school children and in their families, and treatment of such cases until cured.
2. Elimination of towels and toilet articles used in common.
3. Education in the principles of personal cleanliness and the necessity of avoiding direct or indirect transference of body discharges.
4. Control of public dispensaries where communicable eye diseases are treated, and creation of special treatment classes where the disease prevails.
5. Exclusion of infected immigrants at national boundaries, or preferably at foreign port of embarkation.
6. Routine examination of eyes of children admitted to institutions, or in industrial camps where the disease is prevalent.
7. Under certain conditions in areas of widespread prevalence of the disease, the prophylactic use of solutions of zinc sulfate (1 percent), or copper sulfate (0.5 percent) may prove a valuable protective measure for children.

Regulation 11,332: Trachoma. No child suffering from trachoma shall be permitted to attend any public, private, or parochial school unless under the close supervision of a competent physician, who shall certify in writing to the school board and the health officer that the case is not in a contagious state.

Trichinosis

1. *Recognition of the disease.*—In human beings confined to persons who have eaten raw or insufficiently cooked pork and pork products, or occasionally bear meat, containing viable trichinae. Characterized by onset of variable intensity according to the amount of infected meat eaten and the abundance of trichinae in the meat. Nausea, vomiting, or diarrhea may be present. Muscle soreness or pain, edema of face and eyelids, laryngitis, subcutaneous hemorrhages, cough, pain in the chest, difficulty in swallowing, and labored breathing may occur, even pneumonia or involvement of the central nervous system in some cases. An intermittent fever is usual. Eosinophilia is usually marked. It may occasionally be absent in overwhelming infections and in individuals suffering from concomitant bacterial or virus infections. The symptoms are extremely variable. Intradermal and precipitin tests should be employed as aids in diagnosis. Direct microscopic examination of a biopsied sample of deltoid or gastrocnemius muscle, pressed, or digested in artificial gastric juice, may detect larvae after the 21st day of infection. Occasionally, larvae may be found in the blood or spinal fluid.
2. *Etiological agent.—Trichinella spiralis.*
3. *Source of infection.*—Uncooked or insufficiently cooked pork, less frequently meat of other animals.
4. *Mode of transmission.*—Only through consumption of meat containing viable infective larvae; adult worms and infective larvae occur in the same hosts.
5. *Incubation period.*—Usually the onset occurs 6 to 7 days after ingestion of the infective meat. In heavy infections gastrointestinal symptoms may appear in 24 hours.
6. *Period of communicability.*—Disease is not transmitted by human host to man.
7. *Susceptibility and immunity.*—Susceptibility is general. Neither natural nor acquired immunity is known to occur in man.
8. *Prevalence.*—World-wide. The parasite is particularly widespread in the United States, about one in every 6 necropsies showing infection. Clinical cases probably occur more frequently than is indicated by morbidity reports and the disease is probably often confused with other illnesses. No selection by age, sex, race, region, season, or climate except as these affect the custom of eating the insufficiently cooked flesh of infected hogs or other animals.
9. *Methods of control:*
   A. The infected individual, contacts, and environment:
      1. Recognition of the disease and reporting: Clinical symptoms, marked eosinophilia, and intradermal and precipitin tests, confirmed after the third week of symptoms or fever by examination of biopsied muscle for encysted larvae.
      2. Isolation: None.
      3. Concurrent disinfection: None.

4. Terminal disinfection. None.
5. Quarantine: None.
6. Immunization: None.
7. Investigation of source of infection. Effort should be made to trace source of infection in pork or pork products believed to be involved. Examination of pressed or digested preparation may reveal trichina larvae.

B. General measures:

1. Inauguration of local and state meat inspection to assure adequate processing of all pork products not processed under federal inspection, and customarily eaten without further adequate cooking by the consumer.
2. Encouragement of farmers and hog raisers in the use of standard swine sanitation practices which will reduce opportunity for trichina infection in swine.
3. Control of rats, particularly on farms and around hog-raising establishments and stockyards.
4. Burial or other adequate disposal of rat and swine carcasses to prevent hogs from feeding on them.
5. Elimination of the current practice of feeding garbage and offal to swine or the adoption and enforcement of suitable laws and regulations ensuring cooking such material before its consumption by swine.
6. Cooking of all fresh pork and pork products by the consumer, at a temperature and for a time sufficient to allow all parts of the meat to reach a temperature of at least 150° F., unless it is known that these meat products have been processed under federal or other official regulations adequate for the destruction of trichinae.

Tuberculosis, Pulmonary

[See, also, Chapter XIII, Additional Laws, Rules, and Regulations.]

1. *Recognition of the disease:*

A. Primary or first infection type: Characterized by hilum gland enlargement or discrete parenchymal shadows in chest x-ray, usually with positive tuberculin test, sometimes accompanied by vague constitutional symptoms and rarely by erythema nodosum, all of which regress spontaneously except in occasional cases which develop meningitis or other progressive tuberculous disease. Recognition by history of contact and x-ray findings and confirmed by staining, culture, and animal inoculation of stomach washings.

B. Adult or reinfection type: Characterized by insidious onset with parenchymal pulmonary infiltration, usually in the upper lobes, recognizable by chest x-ray for a variable period of time before constitutional symptoms or physical signs appear. Pleurisy with effusion and unexplained hemoptysis are almost specific first symptoms; cough, fever, fatigue, and weight loss accompany advanced disease, which is recognizable by x-ray and by physical signs of dullness and rales, and confirmed by staining, culture, and animal inoculation of sputum, or of stomach washings where

sputum is absent or negative. Tuberculin test usually positive. Failure to find organisms on microscopic examination of sputum does not rule out tuberculosis; repeated examinations of concentrated sputum and of stomach washings by culture and animal inoculation will eventually demonstrate tubercle bacilla in the majority of active cases.

2. *Etiological agent.*—Tubercle bacillus (human), *Mycobacterium tuberculosis (hominis)*; bovine type has been established as important in some areas (outside the continental United States) where milk is not pasteurized and infection of cattle is prevalent; avian type doubtful for human infections.
3. *Source of infection.*—The specific microörganisms present in the discharges, or articles freshly soiled from the discharges, from any open tuberculosis lesions, the most important discharge being sputum. Of less importance are discharges from the intestinal and genitourinary tracts, or from lesions of the lymph nodes, bone, and skin.
4. *Mode of transmission.*—Usually through the discharges of the respiratory tract, occasionally through those of the digestive tract, by direct or indirect contact with infected persons, by means of coughing, sneezing, or other droplet infection, by kissing, by the use of contaminated eating and drinking utensils, and possibly by contaminated flies and dust. Infection rarely occurs from casual contact, but usually results from the continued type of exposure characteristic of family relationships.
5. *Incubation period.*—Variable, dependent upon the type of the disease, dosage, age, and other factors.
6. *Period of communicability.*—As long as the specific microörganism is eliminated by the host. Commences when a lesion becomes an open one, *i. e.*, discharging tubercle bacilli, and continues until it heals or death occurs. The degree of communicability varies with the number and virulence of the bacilli discharged, the frequency of exposure, and the susceptibility of the persons exposed.
7. *Susceptibility and immunity.*—Susceptibility is general; highest in children under 3 years, lowest from 3 to 12 years of age, and relatively high for the rest of life; in aboriginal races greater than in races long exposed to the disease; in the undernourished, neglected, and fatigued more than in the well fed and well cared for. Silicosis is a predisposing factor. Resistance of some degree is developed with age and by the maintenance of good nutrition. There is no evidence of natural specific immunity.
8. *Prevalence.*—Among the most common communicable diseases of man, with less variation in incidence of infection according to race than in mortality. In most occidental nations its incidence and mortality are declining. Age at which first infection occurs varies; children exposed in the household and in cities are infected earlier than rural children and those not so exposed, who may escape infection until adolescence or adult age. Mortality highest among infants, among adult males up to old age, and among adolescent and young adult females. Leading cause of death at ages 20 to 40. Aboriginal races when first exposed develop the disease in a rapidly fatal form, epidemic at times.

9. *Methods of control:*

A. The infected individual, contacts, and environment:

1. Recognition of the disease and reporting: By use of the x-ray followed by thorough physical examination supplemented by tuberculin testing when necessary and confirmed by bacteriological examination of sputum and other materials. Early discovery in contacts, particularly in family groups exposed to an open case of tuberculosis ("positive" sputum), is of great importance.
2. Isolation of such "open" cases as do not observe the precautions necessary to prevent the spread of the disease may prove advisable. A period of hospital or sanatorium treatment is very desirable in all cases to remove the patient as a focus of infection in his home, and to teach him the hygienic essentials of tuberculosis control as well as to increase his chances of recovery (Note).
3. Concurrent disinfection: Of sputum and articles soiled with it. Particular attention should be paid to prompt disposal or disinfection of sputum itself, of handkerchiefs, cloths, or paper soiled therewith, and of eating utensils used by the patient. Patients should be trained in aseptic respiratory technique in sneezing, coughing, laughing, and talking.
4. Terminal disinfection: Cleaning and renovation.
5. Quarantine:*
6. Immunization: None.
7. Investigation of source of infection: Contacts of all known cases should be examined roentgenologically, with particular attention to elderly persons with chronic cough.

B. General measures:

1. Education of the public in regard to the danger of tuberculosis, the mode of spread, and the methods of control, with especial stress upon the danger of exposure and infection in early childhood.
2. Provision of x-ray and clinical facilities for examination of contacts and suspects, public health nursing service for home supervision of cases and for ensuring examination of contacts, and dispensary service for continuation of collapse therapy in ambulant cases and for clinical supervision of patients not otherwise so supervised.

NOTE: "Collapse therapy" is of value in appropriate cases of the disease in shortening the period of communicability, as well as in reducing the case fatality.

* 11,317—*Tuberculosis.* The legislature has declared tuberculosis to be an infectious and contagious disease, and has prescibed certain restrictions, with penalties for violations, for persons afflicted with this disease, and those who attend them.

It is hereby ruled that when, in the opinion of the State Board of Health or its representative, or of the local health officer or boards of health, persons afflicted with tuberculosis endanger the public health by continuously and repeatedly ignoring or violating the sanitary restrictions prescribed in accordance with the instructions of the legislature, the local board of health officer shall place such persons and household under complete isolation or quarantine and shall placard the premises in such manner that the public may be warned against the presence of the disease in such persons or households.

It is hereby further ruled that the place of quarantine, for such individuals infected with tuberculosis and endangering public health, may be designated by the State Board of Health, its representative, the local health officer, or the local board of health.

3. Provision of adequate sanatorium facilities for isolation and treatment of active cases. A minimum of 2 beds per annual tuberculosis death in the community is a desirable ratio.
4. Elimination of the inhalation of silica dust in dangerous quantity in industrial establishments and trades.
5. Pasteurization of all milk supplies.
6. Improvement of habits of personal hygiene and betterment of living conditions among the underprivileged.
7. Improvement of housing conditions and nutrition of the poor.
8. Separation of babies from tuberculous mothers at birth.
9. Eradication of tuberculosis in cattle.

11,336. Tuberculosis in schools. No child, janitor or teacher suffering from tuberculosis in a communicable form shall be allowed to attend or work in any public, private or parochial school.

I. In the event that any child, janitor or teacher is believed to be suffering from pulmonary or laryngeal tuberculosis, the local health officer upon receipt of information of such belief shall make prompt investigation and satisfy himself either by personal examination or by a written certification from a legally qualified physician of the necessity of the exclusion of such individual from school, and until such examination and certification shall be made the individual shall be excluded from school.

Tuberculosis, Other Than Pulmonary

1. *Recognition of the disease.*—By local manifestations, by constitutional reactions, by specific reactions, and by identification of the tubercle bacillus in the lesions or their discharges through microscopic examination, culture, or animal inoculation.
2. *Etiological agent.*—Tubercle bacillus (human and bovine), *Mycobacterium tuberculosis* (*hominis et bovis*).
3. *Source of infection.*—Discharges from mouth, nose, bowels, and genitourinary tract of infected human beings; the discharging lesions of bones, joints, and lymph glands; articles freshly soiled with such discharges; milk and tuberculous cattle.
4. *Mode of transmission.*—By direct contact with infected persons, by contaminated food, and possibly by contact with articles freshly soiled with the discharges of infected persons.
5. *Incubation period.*—Unknown.
6. *Period of communicability.*—Until discharging lesions are healed.
7. *Susceptibility and immunity.*—Susceptibility is general and is greater in children than in adults.
8. *Prevalence.*—Much less common than the pulmonary form and more rapidly falling in incidence, representing less than 10 percent of total cases and deaths from the disease. Especially common in infants and young children where intimately exposed to parental infection and to bovine infection through unpasteurized milk from tuberculous cattle.
9. *Methods of control:*
   A. The infected individual, contacts, and environment:
      1. Recognition of the disease and reporting: Clinical signs and symptoms confirmed by bacteriological examinations.

2. Isolation: None.
3. Concurrent disinfection: Discharges and articles freshly soiled with them.
4. Terminal disinfection: Cleaning.
5. Quarantine: None.
6. Immunization: None.
7. Investigation of source of infection: Search should be made for possible original source in family, household, or other intimate contacts, and to discover previously unrecognized cases of similar origin, such a search to be aimed at discovery of infected but latent or arrested cases as well as those showing an active process. Special inquiry and investigation should be made to discover possible source of bovine tubercle infection where unpasteurized milk has been used in the family or particularly used uncooked by the patient.

B. General measures.

1. Pasteurization of milk and milk products and inspection of meats.
2. Eradication of tuberculosis in dairy cattle.
3. Patients with open lesions should be prohibited from handling foods.
4. Adequate hospital, sanatorium, and out-patient facilities for discovery, control, and clinical management.

Tularemia

1. *Recognition of the disease.*—Whether the disease is acquired by the bite of the blood-sucking horse fly or the wood tick or from an infected abrasion or skin trauma or infected conjunctiva, or by ingestion of insufficiently cooked meat of infected rabbits, the onset is sudden, with pains and fever, and the patient is usually prostrated and confined to bed. If the disease follows a bite or a conjunctival infection or an infection through the skin, the lymph glands draining the area become swollen and tender and suppurate in about half the cases. The fever is of 3 to 4 weeks' duration, and the convalescence slow. The clinical diagnosis may be confirmed by animal inoculation, isolation of cultures, and agglutination reactions. Less reliable is the skin reaction.
2. *Etiological agent.—Pasteurella tularensis* (*Bacterium tularense*).
3. *Source of infection.*—Wild rabbits and hares, horse fly (*Chrysops discalis*), wood tick, (*Dermacentor andersoni and Dermacenter variablis*), woodchuck, coyote, muskrat, opossum, tree squirrel, quail, skunk, water rat of Europe (*Arvicola amphibus*), cat, deer, dog, fox, hog, sage hen, and bull snake.
4. *Mode of transmission.*—By bites of infected flies and ticks and by inoculation through handling infected animals, as in skinning, dressing, or performing necropsies on infected animals, or by fluids from infected flies, ticks, rabbits, and woodchucks. Ingestion of insufficiently cooked rabbit meat. Rare cases occur from bites of coyotes, skunks, hogs, cats, and dogs, where the mouth of the animal was presumably contaminated from eating infected rabbits. Drinking contaminated water (observed in Russia).

5. *Period of incubation.*—From 24 hours to 10 days, average slightly more than 3 days.
6. *Period of communicability.*—There is no authentic record of transfer of the disease from man to man. The infecting micro-organisms have been found in the blood of man during the first 2 weeks of the disease; in conjunctival scrapings up to 17 days; in the primary lesion on the finger up to 21 days; in the sputum up to 31 days; in lymph glands up to 5 months; in bone marrow (sternum) 18 days after onset; in olecranon bursa 5 months after onset; in ulcer of the hand (not primary lesion) 5 months after onset; in ascitic fluid (taken during life) 5 months after onset; in pleural fluid 5 months after onset; in spinal fluid 16 days after onset; in the spleen taken at autopsy up to 30 days. Flies are infective for 14 days; ticks throughout their lifetime. Refrigerated rabbits kept constantly frozen at 15° C. may remain infective for three and a half years.
7. *Susceptibility and immunity.*—All ages are susceptible. Permanent immunity follows recovery from an attack. An immune person may acquire through an abrasion on his hand and by contact with virulent material, a local tularemic papule which harbors virulent organisms but does not cause notable constitutional reaction.
8. *Prevalence.*—The disease has been found in every State of the United States except Vermont and Connecticut, also in Canada, Japan, Russia, Norway, Sweden, Italy, Austria, Czechoslovakia, Turkey, Alaska, and central Germany. It occurs every month of the year, but especially during the hunting season. The case fatality is about five percent.
9. *Methods of control:*

   A. Premises not placarded.

   B. The infected individual, contacts, and environment:
      1. Recognition of the disease and reporting: Human cases should be reported to the health department.
      2. Isolation: None.
      3. Concurrent disinfection: Disinfection of discharges from the ulcer, lymph glands, or conjunctival sac.
      4. Terminal disinfection: None.
      5. Quarantine: None.
      6. Immunization: None.
      7. Investigation of source of infection should be undertaken in each case.

   C. General measures:
      1. Avoidance of the bites of, or handling of, flies and ticks when working in the infected zones during the seasonal incidence of bloodsucking flies and ticks.
      2. The use of rubber gloves by persons engaged in dressing wild rabbits wherever taken, or when performing necropsies on infected laboratory animals. Employment of immune persons for dressing wild rabbits or conducting laboratory experiments. Thorough cooking of meat of wild rabbits.
      3. Avoidance of raw drinking water in infected areas.

Typhoid Fever

1. *Recognition of the disease.*—A general infection with the typhoid bacillus, characterized by a continued fever, and by involvement of the lymphoid tissues especially, with enlargement and often ulceration of Peyer's patches, enlargement of the spleen, usually rose spots on the trunk, diarrheal disturbance, and a variety of severe constitutional disturbances accompanying parenchymatous involvement of various viscera. The infecting microörganism can be found in the blood, the feces, and the urine.
2. *Etiological agent.*—Typhoid bacillus, *Eberthella typhi.*
3. *Source of infection.*—Bowel discharges and urine of infected individuals. Healthy carriers are common.
4. *Mode of transmission.*—Conveyance of the specific micro-organism by direct or indirect contact with a source of infection. Among indirect means of transmission are contaminated water, milk, and shellfish, and probably flies.
5. *Incubation period.*—From 3 to 38 days, usually 7 to 14 days.
6. *Period of communicability.*—From the appearance of prodromal symptoms, throughout the illness and relapses during convalescence, and until repeated bacteriological examinations of the discharges show continuous absence of the infecting organism.
7. *Susceptibility and immunity.*—Susceptibility is general. Natural immunity exists to some extent in adults. Acquired immunity of permanent duration usually follows recovery from the disease. Artificial active immunity of probably 2 years' duration can be developed by the use of typhoid vaccine. Protection persists for about one year at a high level.
8. *Prevalence.*—Widespread throughout the world regardless of race, age, sex, climate, or geography. Formerly in most large cities of North America and in many extensive rural areas in endemic and epidemic form, and still endemic in some rural areas of the southern United States but commonly now occurring in sporadic cases and as small contact and carrier epidemics. Steadily falling in incidence, particularly in all urban areas supplied with water of a sanitary quality and pasteurized milk, and where human fecal waste is disposed of without polluting water supplies, food or surface of the soil.
9. *Methods of control:*
   A. Premises placarded.
   B. The infected individual, contacts, and environment:
      1. Recognition of the disease and reporting: Clinical symptoms confirmed by specific agglutination test and bacteriological examination of blood, bowel discharges, or urine.
      2. Isolation: In flyproof room, preferably under hospital conditions, of such cases as cannot command adequate sanitary environment and nursing care in their homes. Release from isolation should be determined by two successive negative cultures of stool and urine specimens collected not less than 24 hours apart.

3. Concurrent disinfection: Disinfection of all bowel and urinary discharges and articles soiled with them.
4. Terminal disinfection: Cleaning.
5. Immunization: Of susceptibles in the family or household of the patient who have been exposed or may be exposed during the course of the disease.
6. Investigation of soure of infection: The actual or probable source of infection of every case should be determined by searching for common and individual sources (1) polluted water, milk, shellfish, and other food supplies, (2) unreported cases and carriers.

C. General measures:

1. Protection and purification of public water supplies.
2. Pasteurization of public milk supplies.
3. Limitation of collection and marketing of shellfish to those from approved sources.
4. Sanitary disposal of human excreta.
5. Supervision of other food supplies, and of food handlers.
6. Prevention of fly breeding.
7. Extension of immunization by vaccination to persons subject to unusual exposure by reason of occupation or travel, to those living in areas of high endemic incidence of typhoid fever and to those for whom the procedure can be systematically and economically applied, as in the military forces and institutional populations.
8. Discovery and supervision of such typhoid carriers, and their exclusion from the handling of foods, as epidemiological and bacteriological evidence indicate are of importance.
9. Exclusion of suspected milk supplies on epidemiological evidence pending discovery and elimination of the cause of contamination of the milk.
10. Exclusion of suspected water supply, until adequate protection or purification is provided unless all water used for toilet, cooking, and drinking purposes is boiled before use.
11. Education of the general public and particularly of food handlers concerning the sources of infection and modes of transmission of the disease.
12. Instruction of convalescents and chronic carriers in personal hygiene, particularly as to sanitary disposal of fecal waste and handwashing after use of toilet, and restraint from acting as food handlers.

Typhoid Carriers: Additional Rules and Regulations

11,321. Typhoid carriers. A typhoid carrier is a person who harbors typhoid bacilli and emits them regularly or intermittently. This condition may or may not follow a recognized attack of typhoid fever. A person continuing to discharge typhoid bacilli following an attack of typhoid fever shall be regarded as a case rather than a carrier, for a period of at least twelve (12) weeks following subsidence of clinical symptoms. After that period the health officer may, in his discretion, declare such person to be a carrier.

I. The health officer, upon the discovery of a typhoid carrier, shall immediately report the fact to the state department of health, giving the full name, age, occupation and address of such carrier (together with any other information relative to possible or probable infection of others), and shall also communicate the fact to the carrier himself, or his guardian, imparting to him detailed information regarding the precautions to be observed in disposing of his discharges, in preventing contamination of his hands, and thus protecting others from infection. Instructions given by the health officer should include directions to wash the hands thoroughly with soap and water immediately after using the toilet, and to use individual towels and drinking and eating utensils, which should be thoroughly cleansed, preferably by boiling, before being used by others.

II. When an outside toilet is used regularly by a typhoid carrier it shall be equipped with a watertight container, so screened as to exclude flies, and the removal of the contents for disposal should be in accordance with the instructions given by the health officer.

III. No typhoid carrier may engage in any occupation involving the handling of milk or other food products to be consumed by others. It is recommended that immediate members of the household should all be immunized against typhoid fever every two (2) years.

IV. No typhoid carrier shall leave the community in which he resides without notification to the local health officer, who is to be informed of his destination, including his new address. The health officer should immediately notify the State Department of Health of the change of address.

V. The local health officer shall visit each typhoid carrier within his jurisdiction at least once monthly in order to determine whether instructions are being observed; and once in each quarter shall render a report regarding each such carrier to the State Department of Health, upon a form prescribed for the purpose.

VI. The health officer shall cause samples of the discharges from each carrier to be examined bacteriologically at intervals, at a laboratory approved by the State Department of Health, and a carrier may be regarded as recovered and be discharged from observation when four (4) successive samples of the discharges, taken not less than seven (7) days apart, shall have been found not to contain typhoid bacilli: *Provided,* That in case the history shows that the person has been a carrier for a period of over two years this rule shall not apply as to recovery of carrier: *And provided further,* That chronic typhoid carriers of over two years' duration may be released by the State Department of Health upon satisfactory evidence of recovery.

Typhus Fever

1. *Recognition of the disease.*—Whether in the classical and severe epidemic form of the louse-transmitted disease or in the mild flea-borne and sporadic type, the onset is variable, often being sudden and marked by headache, chills, fever and general pains, and a macular eruption on the fifth or sixth day, toxemia, and a quite definite course terminating in rapid lysis after about 2 weeks of fever. A positive Weil-Felix reaction is valuable as confirmation of the diagnosis.
2. *Etiological agent.—Rickettsia prowazeki.*

3. *Source of infection.*—The only known source is the blood of infected persons or infected rats.
4. *Mode of transmission.*—The infectious agent is transmitted from man to man by lice (*pediculus corporis*) and from rat to rat or man by fleas (*Xenopsylla cheopis*).
5. *Incubation period.*—From 6 to 14 days, most often 12 days.
6. *Period of communicability.*—In the presence of lice, highly communicable until 36 hours have elapsed after the temperature reaches normal.
7. *Susceptibility and immunity.*—Susceptibility is general. One attack confers immunity, which is not always permanent.
8. *Prevalence.*—Widespread. Flea-borne typhus predominantly in late summer and fall; louse-borne predominatly in winter and spring. The case fatality of flea-borne typhus is 2 percent, and of louse-born typhus 20 to 40 percent.
9. *Methods of control:*
   - A. Premises placarded.
   - B. The infected individual, contacts, and environment:
     1. Recognition of the disease, and reporting: Cases should be promptly reported to the health authorities.
     2. Isolation: In a vermin-free room.
     3. Concurrent disinfection: Destroy all lice and louse eggs on the clothing or in the hair of the patient.
     4. Terminal disinfection: None.
     5. Quarantine: In the presence of lice, exposed susceptibles should be quarantined for 14 days after last exposure.
     6. Immunization: Methods not applicable to conditions in the United States.
     7. Investigation of source of infection: Particular attention should be paid to patient's contact with rats, and with louse-infected persons or clothing.
   - C. General measures: The elimination of rats.
   - D. Epidemic measures: Delousing of persons, clothing, and premises.

Undulant Fever (Brucellosis)

1. *Recognition of the disease.*—A general infection with gradual or insidious onset and characterized by irregular fever of uncertain but often prolonged duration, profuse sweating, chills (or chilliness), pain in joints and muscles. Agglutination test and identification of the infecting microörganism in the blood, tissues, or discharges of the patient are valuable aids in diagnosis. A mild, obscure form of the disease, diagnosed only with difficulty, may last for years.
2. *Etiological agent.—Brucella melitensis* (*Alkaligenes melitensis, Micrococcus melitensis*); *Brucella abortus* (*Alkaligenes abortus*); *Brucella suis.*
3. *Source of infection.*—The tissues, blood, milk, and urine of infected animals, especially goats, cattle, and swine. Laboratory infections take place readily.
4. *Mode of transmission.*—By ingestion of milk from infected animals and by direct contact with infected animals or animal products.

5. *Incubation period.*—Six to 30 days or more.
6. *Period of communicability.*—Practically not communicable from person to person but the organism is present in the urine, usually for 90 days with a range of 20 to 300 days.
7. *Susceptibility and immunity.*—Susceptibility is not general, as most persons have some degree of natural immunity, especially to the abortus varieties of the infecting agent, or they have acquired partial immunity by ingestion of small doses of these. Immunity uncertain.
8. *Prevalence.*—Occurs more often in males than in females, and particularly in persons whose occupation brings them into relation with milk cows or goats, and in persons using unpasteurized milk of cows or goats. Found in every one of the United States and in Canada, affecting persons of any race. Occurs most often in the months of May to October. Many cases of a mild type doubtless occur without record.
9. *Methods of control:*

   A. Premises not placarded.

   B. The infected individual, contacts, and environment:
      1. Recognition of the disease and reporting: The clinical picture and particularly the undulant character of the fever, supplemented by exact determination through the use of agglutination tests and bacteriological examination of the blood and urine for the infecting micro-organism.
      2. Isolation: None.
      3. Concurrent disinfection: Ordinary sanitary precautions. Extreme care is necessary in laboratory work, especially when dealing with *Brucella melitensis.*
      4. Terminal disinfection: None.
      5. Quarantine: None
      6. Investigation of source of infection: Human cases should be traced to the common or individual source of infection, usually to infected domestic goats, swine, or cattle, or to the unpasteurized milk products from cattle and goats.

   C. General measures:
      1. Pasteurization of milk whether from cows or goats.
      2. Search for infection among livestock by agglutination reaction and elimination of infected animals from the herd by segregation or slaughter.
      3. Education of the public and particularly workers in slaughter houses, packing houses, and butcher shops, as to the nature of the disease, the mode of transmission, and the danger of handling carcasses or products of infected animals.

Vincent's Infection

(Vincent's Angina, Ulcerative or Necrotic Stomatitis, Trench Mouth)

1. *Recognition of the disease.*—Lesions occurring on either the tonsils or pharynx (angina), or the oral mucosa (stomatitis) are characterized by necrosis, pseudomembranous formation, salivation, and a fetid odor. In angina and the more acute forms of stomatitis there is marked pain on

swallowing, enlarged tender cervical nodes, and slight fever. Acute type of Vincent's infection is characterized by a rapid onset. The affected gums become acutely inflamed, the interdental papillae edematous with a soft thick appearance, bleeding easily and very painful. Necrosis of the interdental papillae occurs with subsequent development of characteristic grayish-white pseudomembrane which is easily removed leaving a raw, profusely bleeding surface. Ulcerations may coalesce and progress to adjoining alveolar palatal, and buccal mucosa, spread toward the buccal sulcus being the more common. A distinctive mixed bacterial flora including spirochetes, fusiform bacilli, and other organisms characterize this group of diseases. Differential diagnosis should exclude: suppurative periodontitis, diphtheria, mucous patches of syphilis, agranulocytic angina, scurvy, and sprue.

2. *Etiological agent.*—Complex: underlying and predisposing conditions apparently important, if not essential, in development. Fuso-spirochetal flora are present in small numbers on healthy tissue but proliferate rapidly under pathologic conditions.
3. *Source of infection.*—Discharges from the lesions of infected persons and from carriers often assumed to be source of infection but not yet adequately demonstrated.
4. *Mode of transmission.*—Direct contact with infected persons or carriers and articles freshly soiled by such persons is often assumed to be source of infection, but not yet adequately demonstrated.
5. *Incubation period.*—Variable and undetermined.
6. *Period of communicability.*—Not determined but presumed to be as long as the infecting organisms are found in the mouth. Not readily communicable.
7. *Susceptibility and immunity.*—Susceptibility probably general if predisposing conditions are present. Milder forms of Vincent's stomatitis seem more prevalent under conditions of depressed vitality, malnutrition, neglected oral hygiene, etc. No immunity known to be acquired. Prevailing predisposition, not clearly understood, makes reoccurrence in susceptible individuals likely.
8. *Prevalence.*—Relatively rare and sporadic in general population. Not uncommon among persons of low nutrition and neglected oral hygiene; seemingly more prevalent in children and younger adults than in older adults. May be high at times in segregated populations living under unfavorable or crowded conditions.
9. *Methods of control:*
   A. The infected individual, contacts, and environment:
      1. Recognition of the disease and reporting: On clinical manifestations with or without bacteriological confirmation should be reported to school authorities when found among school children, and under conditions of military service should be reported whether as angina or stomatitis.
      2. Isolation: None.
      3. Concurrent disinfection: All discharges from mouth and nose.
      4. Terminal disinfection: None.

5. Quarantine: None.
6. Immunization: None.
7. Investigation of source of infection: Inspection of mouths and throats of other children or adults associated with the patient, at home or in school. Carriers are too common to be worth searching for by culture methods.

B. General measures:
1. Encouragement of oral hygiene; correction of abnormal or diseased conditions of teeth and gums.
2. Education in matters of nutrition and hygiene.
3. Check of drinking water facilities.
4. Outbreaks involving small children, especially institutional, warrant special measures because of the danger of the possible complication of noma.

Whooping Cough (Pertussis)

1. *Recognition of the disease.*—An acute infection involving the trachea and bronchi and characterized by a typical cough usually lasting from 1 to 2 months. The initial catarrh usually has an insidious onset manifested by an irritating cough. The cough gradually becomes paroxysmal usually within 1 to 2 weeks. The paroxysms are characterized by a repeated series of violent coughs, each series consisting of many coughs without intervening inhalation and often followed by the characteristic, sonorous, inspiratory whoops. Paroxysms frequently end with vomiting of clear, tenacious mucus. The etiological agent has been recovered by use of special culture plates exposed before the patient's mouth during a cough in the catarrhal and early paroxysmal stage of the disease. A definite lymphocytosis is usually present.
2. *Etiological agent.*—Pertussis bacillus of Bordet and Gengou, *Hemophilus pertussis.*
3. *Source of infection.*—Discharges from the laryngeal and bronchial mucous membranes of infected persons.
4. *Mode of transmission.*—Contact with an infected person, or with articles freshly soiled with the discharges of such person. Healthy carriers are not known to occur.
5. *Incubation period.*—Commonly 7 days, almost uniformly within 10 days, and not exceeding 16 days.
6. *Period of communicability.*—Particularly communicable in the early catarrhal period before the typical cough confirms the clinical diagnosis. After the typical paroxysms are established, communicability gradually decreases and becomes negligible for ordinary nonfamilial contact in about 3 weeks even though the spasmodic cough with whoop may persist. The communicable stage must be considered to extend from 7 days after exposure to an infected individual to 3 weeks after onset of typical paroxysms.
7. *Susceptibility and immunity.*—Susceptibility is general. There is no natural immunity. The greatest susceptibility is in children between 6 months and 5 years of age, after which there is some decrease. One attack con-

fers a definite and prolonged immunity, although second attacks do occur. A brief passive immunity may be conveyed to young children by convalescent serum or adult whole blood. Artificial active immunization is still in the experimental stage. Susceptibility is apparently higher in females at all ages than in males.

8. *Prevalence.*—Very prevalent, and a common disease among children everywhere regardless of race, climate, or geographical location. About half the reported cases in cities are in children under 5 years of age, and 90 percent in children under 10. Incidence and fatality rates are higher among females. Somewhat less prevalent in tropical than in temperate climates. Seasonal incidence variable, but mortality higher usually in spring months in North America. Cyclical occurrence irregular.

9. *Methods of control:*

   A. The premises shall be placarded.

   B. The infected individual, contacts, and environment:

      1. Recognition of the disease and reporting: Clinical symptoms, supported by a differential leucocyte count, and the use of nasal culture or cough plate.

      2. Isolation: Separation of the patient from susceptible children, and exclusion of the patient from school and public places for the period of assumed infectivity. It is of particular importance to protect children under 3 years of age against contact with any other children with cough and fever, of whatever origin, and especially if whooping cough is suspected or is known to be prevalent. Isolation of children over 2 years of age is impracticable, and even in those under 2 should not be insisted upon at the expense of fresh air in the open if weather permits.

      3. Concurrent disinfection: Discharges from the nose and throat of the patient and articles soiled with such discharges.

      4. Terminal disinfection: Thorough cleaning.

      5. Quarantine: Minimum period of quarantine shall be until six weeks after the development of the disease, or until one week after the last characteristic paroxysmal cough or whoop. All nonimmune contacts in children should be excluded from school and public gatherings for 14 days after last exposure to a recognized case except those who are inspected daily, as approved by the health officer, for a period of eighteen days following the last exposure.

      6. Immunization: Use of prophylactic vaccination is recommended by some observers, but for public health practice is still in the experimental stage. There is some evidence that attacks are milder in the vaccinated.

      7. Investigation of source of infection: An effort should be made to discover undiagnosed and unreported cases, with the main object in view of protecting young children from exposure, and thus reducing the mortality. Postponement of the age of infection at least until school age and great care in the management of the disease in young children offer some hope of

reducing deaths from whooping cough although reduction of incidence by any means appears unlikely. Carriers in the exact sense of this term are not known to occur.

B. General measures: Education in habits of personal cleanliness and in the dangers of association or contact with those showing catarrhal symptoms with cough.

1. The minimum duration of quarantine or isolation of all cases of whooping cough shall be until six weeks after the development of the disease or until one week after the last characteristic paroxysmal cough or whoop.
2. Owing to the difficulty of making a positive diagnosis in mild cases of this disease, due to the absence of the characteristic whoop in fifty percent of the cases that occur, it is hereby ruled that whenever the health officer declares the disease to be epidemic in the community, all children under fourteen years of age having a paroxysmal cough, which continues for one week, must be immediately reported to the local health department so that proper precaution can be taken to protect the public health until a definite diagnosis can be made.

Yaws (Frambesia)

1. *Recognition of the disease.*—The initial lesion in the form of a granuloma or papules, is located extragenitally, usually on the legs, and is often engrafted upon a preëxisting wound or ulcer. In from 1 to 3 months, widespread lesions of the skin develop. The first generalized lesion may be in the form of a furfuraceous desquamation as though the skin had been dusted with flour, but soon characteristic raspberry-like lesions appear. Bone and joint pains are common, and bone lesions are frequently observed. The constitutional symptoms are mild and of little diagnostic value. Among the commonest lesions are those of the soles of the feet, giving rise to the condition known as "crab yaws" because of the difficulty and manner of locomotion. The course of the disease is chronic, and the relapses are common. The blood Wasserman reaction and related tests become positive soon after the appearance of the initial lesion and remain positive for many years unless affected by treatment.
2. *Etiological agent.—Treponema pertenue.*
3. *Source of infection.*—Discharges from skin lesions and mucous membranes.
4. *Mode of transmission.*—Direct contact with lesions of patient and by non-biting flies which convey the discharges of infected persons to others.
5. *Incubation period.*—Three and one-half weeks (experimental) to three or more months.
6. *Period of communicability.*—As long as the lesions are open and there are moist discharges.
7. *Susceptibility and immunity.*—There is no racial immunity but Negroes are more commonly affected than whites; children and young people more than adults. Recovery from an attack does not result in immunity to reinfection. It is neither congenital nor hereditary.

8. *Prevalence.*—Very common in the tropics, especially in Africa, Polynesia, the Philippines, and some parts of the New World. In the West Indies more prevalent in some villages than others. At present not known as indigenous in continental North America. Especially prevalent in the Caribbean area: Jamaica, Haiti, Trinidad, Antigua, and other islands of the Leeward group, and some coastal and valley settlements of Colombia.
9. *Methods of control:*
   A. The infected individual, contacts, and environment:
      1. Recognition of the disease and reporting.
      2. Isolation not practicable.
      3. Concurrent disinfection: Protection of all sores and lesions in endemic locality, and disinfection of soiled dressings.
      4. Terminal disinfection: None.
      5. Quarantine: None.
      6. Immunization: None.
      7. Investigation of source of infection: In indigenous areas local surveys of incidence should be made, range of prevalence determined, and cases in early stages sought for, especially in children.
   B. General measures:
      1. Free clinics, laboratory service, and arsenicals for diagnosis and treatment.
      2. Information service for physicians, patients, and public.
      3. Promotion of adequate personal prophylaxis.
      4. Education in schools, clinics, clubs, etc., as to methods of spread, prevention and treatment.

Yellow Fever

1. *Recognition of the disease.*—Clinical diagnosis usually rests upon sudden onset, fever, prostration, slow pulse in relation to body temperature, severe headache and backache, congestion of mucous membranes, bleeding gums, black vomit in severe cases, and late jaundice, with brief duration of illness. Pronounced albuminuria and leukopenia are characteristic. A history of possible bites of infected mosquitoes is corroborative but absence of such or even failure to find *Aëdes aegypti* mosquitoes in the vicinity does not necessarily exclude the diagnosis. Almost symptomless and certainly unrecognizable cases of this infection occur among Negro races in Africa, and among very young children in tropical America.
2. *Etiological agent.*—A specific filterable virus.
3. *Source of infection.*—The blood of infected persons, monkeys, and probably some other wild animals.
4. *Mode of transmission.*—By the bite of infected *Aëdes aegypti* mosquitoes, and of a few allied species. (It is not yet certain that some other suctorial insect may not be capable of acting as the transmitter.)
5. *Incubation period.*—Three to six days, rarely longer.

6. *Period of communicability.*—Two days prior to onset of fever and first 3 days of the fever, possibly 4. High degree of communicability where infected mosquitoes abound and there are many susceptible persons.
7. *Susceptibility and immunity.*—Recovery from an attack of the disease is regularly followed by immunity, apparently for life. There is no natural immunity. Brief artificial immunity may be developed by the use of convalescent serum. Active immunity is quickly developed by the use of modified living virus. The duration of this is uncertain but it apparently lasts for several years.
8. *Prevalence.*—Endemic in certain species of monkeys (and perhaps other jungle animals) of northern and central South America, and probably of Central America. Rare epidemics among human beings; sporadic human cases, probably of jungle origin. Not known in the Pacific Basin. No case in North America or Puerto Rico for many years. Endemic among human beings and some animals of western and central Africa.
9. *Methods of control:*
   A. Premises not placarded.
   B. The infected individual, contacts, and environment:
      1. Recognition of the disease and reporting: Clinical symptoms.
      2. Isolation: Isolate from mosquitoes in a special hospital ward or thoroughly screened room. It is necessary that the room or ward should be freed from mosquitoes by fumigation, trapping, or highly responsible collection and destruction of the insects. Isolation necessary only for the first 4 days of the fever.
      3. Concurrent disinfection: None.
      4. Terminal disinfection: None, except for the purpose of destroying mosquitoes in the house occupied by the patient and in the nearest neighboring dwellings, usually best by gaseous fumigation.
      5. Quarantine: None.
      6. Immunization: Immunity is quickly conferred by a single inoculation with an attenuated strain of living virus.
      7. Investigation of source of infection: Human carriers are not known to exist. Search for undiscovered mild and unreported cases of illness resembling yellow fever, examination of viscerotome specimens from bodies of persons dying less than 10 days after onset of an acute febrile illness, and systematic testing of immunity in groups related in time and proximity to the case in question are of epidemiological importance. Seach for the *Aëdes aegypti* mosquito and other species believed to be capable of transmitting the infection should be particularly thorough in the vicinity of residence, work, or travel of known cases of the disease.
   C. General measures:
      1. Immediate immunization of all persons in the community is the quickest control measure.
      2. Destruction of mosquitoes in infected and adjacent homes should be done at once.

3. Eliminate breeding of *Aëdes aegypti* mosquito throughout the community by organized service of inspection and sanitary control.
4. An inspection service for discovery of those ill with the disease is desirable whether the disease occurs in the classical, mild, or atypical form.

Chapter XI

REPORTABLE INDUSTRIAL DISEASES

The following named diseases are declared to be dangerous to the public health and are reportable to the Kansas State Board of Health.

1. Arsenic Poisoning: This type of poisoning is not common in Kansas.
   a. *Recognition of the disease.*—The symptoms and conditions which exemplify arsenic poisoning are eruptions and bronzing of skin, loss of nails and hair, keratosis, epithelioma, inflammation of eye, nose, mouth, and respiratory tract, perforation of nasal septum, headache, gastro-intestinal disturbances with nausea, vomiting, and severe diarrhea and abdominal pains, peripheral polyneuritis, muscular weakness, and paralysis.
   b. *Etiological agent.*—Arsenic and its compounds (except Arseniuretted hydrogen).
   c. *Source of infection.*—Arsenic workers, bookbinders, brass foundries, artificial leather makers, commercial insecticides and vermin eradicators, electroplating.
   d. *Mode of transmission.*—Acquired by ingestion and inhalation or direct contact.
   e. *Incubation period.*—Depends, of course, on the amount ingested, inhaled or contacted directly.
   f. *Susceptibility.*—Anyone is susceptible. No natural immunity.
   g. *Prevalence.*—Not common in Kansas industries.
   h. *Methods of control.*—Correct control of industrial wastes containing arsenic compounds. Proper ventilation and exhausting adequately of all operations in which arsenical compounds are used. Personal hygiene and plant housekeeping.
2. Brass Poisoning: This type of poisoning is rare in Kansas industries, there being only a few brass foundries in the state.
   a. *Recognition.*—Metal fume fever is an acute transient illness often referred to as brass founders' ague, metal shakes and brass chills. A few hours after exposure, the nose, throat, and substernal region feel dry and sore, burn and give rise to a dry cough. A feeling of constriction in the chest, headache and lassitude may be complained of and sometimes nausea and vomiting occur. Within one to several hours, the symptoms become aggravated, the headache becomes worse, vision may become blurred as chilly sensations begin to appear, and the victim usually takes to his bed. Myalgia and arthralgia are also usually present at this stage. The symptoms associated with the chill, and also by crisis, are followed by profuse perspiration. Considerable prostration usually follows an attack but by the next morning recovery is usually complete. An entire attack seldom lasts longer than from a few to twenty hours, and for this reason compensation is rarely claimed.
   b. *Etiological agent.*—Brass.
   c. *Source of infection.*—Brass foundry.

d. *Mode of transmission.*—None. Poisoning occurs as result of inhalation of fumes containing brass.
e. *Incubation period.*—Depends upon concentration of fumes and length of exposure. Usually of very short incubation.
f. *Susceptibility.*—New workers and employees upon their return to work following a holiday or lay-off are particularly susceptible to an attack. Immunity to brass poisoning, once acquired, lasts only five days. The illness from brass poisoning is more apt to occur during the winter and is aggravated by chilling the body.
g. *Prevalence.*—Does occur in Kansas, but not widespread.
h. *Methods of control.*—Adoption of an adequate medical and engineering program. In conducting preplacement or transfer examinations, it should be remembered that the clinical course of chronic respiratory condition, such as bronchiectasis, asthma, and arrested TBC and chronic heart disease, may be unfavorably influenced by the fever and chills. Adequate exhausting of operations in which brass fumes are given off.

3. Carbon Monoxide Poisoning: This condition has been prevalent on a wide scale in Kansas, especially during the winter months, and has not been confined to industry alone. It is perhaps the most common all-around general toxic hazard faced by the citizens of Kansas, as it is chiefly the result of insufficient combustion which results in CO poisoning.
a. *Recognition of the disease.*—Carbon monoxide poisoning produces symptoms first when the hemoglobin of the blood is about 15% saturated. At this point headache, tightness across the forehead, and dilatation of blood vessels is noted. As the concentration in the blood increases, the following symptoms ensue: Severe headache, weakness, dizziness, dimness of vision, nausea and vomiting, and collapse. Coma and convulsions occur at about 60% saturation of the Hb. Above 60% carbon monoxide concentration of the hemoglobin, death usually occurs. With exercise, latent symptoms often become manifest and existing symptoms are aggravated. On exposure to high concentrations, the victim may notice few, if any, symptoms, yet he may without warning become unconscious and die without regaining consciousness.
b. *Etiological agent.*—Carbon monoxide fumes usually arising from the products of incomplete combustion. This would most commonly occur in the automobile, gas stoves, furnaces, heaters, ovens, etc.
c. *Source of infection.*—Automobiles, furnaces, heaters, stoves, explosions, etc.
d. *Mode of transmission.*—Direct inhalation.
e. *Incubation period.*—Over a period of hours or minutes or seconds depending on concentration.
f. *Susceptibility.*—Anybody inhaling CO is susceptible.
g. *Prevalence.*—Has been common in Kansas in the winter, especially in the trailer camps and cabins.
h. *Methods of control.*—Adequate ventilation and exhausting of products of combustion. Engineering designs on heaters and stoves to correct burners, and ventilation designs. Educational program in regard to proper methods of heating and firing furnaces, stoves, etc.

4. Lead Poisoning: Lead is the most versatile of all metals and the most highly sensitive and tricky in the laboratory.
   a. *Recognition of the disease.*—The symptoms or condition to look for in lead poisoning are: Ashen pallor, jaundice, metallic taste, gastro-intestinal disturbances, constipation, abdominal pains, lead line on gums, asthenia, lassitude, irritability, headache, backache, pain about joints, weakness of grip, tremors of fingers and tongue, lead paralysis, especially of muscles used most, stippling of red blood cells, anemia, ocular disturbances, mental symptoms, abnormal amount of lead in blood, urine or feces or spinal fluid.
   b. *Etiological agent.*—Lead and its compounds.
   c. *Source of infection.*—Inhalation, ingestion and direct contact with lead and its compounds when used in various types of operations.
   d. *Mode of transmission.*—Inhalation, ingestion and direct contact with lead and its compounds over a period of time.
   e. *Incubation period.*—Variable depending upon concentration of lead and its compounds. Usually is of long duration entailing years in time, but may be acute, manifested by gastric colic, etc.
   f. *Susceptibility.*—Everybody susceptible. However, it has been noticed among lead workers, that after all teeth have been extracted, lead does not seem to bother the men.
   g. *Prevalence.*—This condition is widespread and common in Kansas.
   h. *Methods of control.*—Good housekeeping. Use of airline respirators on certain operations. Personal hygiene. Ventilation and exhaustion of operations. Protective clothing. Adequate amounts of milk to drink and vacations when needed. Weekly blood cell examination and analysis of urine for lead. X-rays for determination of deposition of lead in bones.
5. Mercury Poisoning:
   a. *Recognition of symptoms.*—The symptoms or conditions to look for in mercury poisoning are: Stomatitis and gingivitis, salivation, blue line on gums, gastro-intestinal disorders, metallic or fetid breath, fine intention tremor, exaggerated knee jerk, scanning speech, mercurial erethism, loss of memory, insomnia and depression, anxiety and irritability, mercurial eczema.
   b. *Etiological agent.*—Mercury and its compounds.
   c. *Source of infection.*—Operations in which mercury and its compounds are used, such as electroplating.
   d. *Mode of transmission.*—Occurs chiefly from the inhalation of mercury vapor or dust of the metal in its salts. Poisoning may occur through ingestion or cutaneous or subcutaneous routes.
   e. *Incubation period.*—Typically chronic, but may be acute due to large concentrations.
   f. *Susceptibility.*—Equal susceptibility by all.
   g. *Prevalence.*—Not common in Kansas.
   h. *Methods of control.*—Proper ventilation and exhausting of operations. Plant cleanliness—good housekeeping. Personal hygiene. Protective clothing. Airline respirators.

6. Natural Gas Poisoning: Kansas is engaged in the production of natural gas on a large scale, the majority of the wells being located in the southwest part of the state.
   a. *Recognition of the symptoms.*—Natural gas is extremely low in carbon monoxide content. Headache, drowsiness, weakness, lassitude are the first cardinal symptoms associated later with pallor, nausea and vomiting as the concentrations of the gas increase. Incomplete combustion of the gas will give all the symptons of carbon monoxide poisoning if the gas is being utilized for heating. However, if the gas is used in free form, the symptoms are those of anoxemia.
   b. *Etiological agent.*—Natural gas.
   c. *Source of infection.*—Gas jets, stoves, furnaces, gas wells.
   d. *Mode of transmission.*—Direct inhalation.
   e. *Incubation period.*—Depends on cencentration of the gas and length of time breathed. May be from minutes to hours.
   f. *Susceptibility.*—Anyone susceptible.
   g. *Prevalence.*—Usually accidental or suicidal in nature. Occurs usually with stoves and furnaces.
   h. *Methods of control.*—Proper installation of heating devices, proper inspection before use for leaks. Proper operation of gas unit, be it stove or furnace.
7. Phosphorus Poisoning:
   a. *Recognition of symtoms.*—Increasingly severe toothache, digestive disturbances, swelling and ulceration of the gums, and buccal membrane loosening and falling out of the teeth, suppuration and destruction of jawbone with fistulous channels burrowing through the cheek, meningeal inflammation, emaciation. Necrosis of the bones, other than the jawbone, has also been noticed.
   b. *Etiological agent.*—Phosphorus.
   c. *Source of infection.*—Phosphorous trichloride, phosphorous pentachloride, phosphorous oxychloride and phosphorous sesquisulphide. Inhalation of the phosphorous dust. Burns.
   d. *Mode of transmission.*—Inhalation or direct contact with white phosphorus to cause burns.
   e. *Incubation.*—Burns are immediate—treated by immersion in water or 5 percent solution of copper sulphate. Inhalation poisoning occurs according to length and concentration of exposure to the dust.
   f. *Susceptibility.*—Everyone susceptible.
   g. *Prevalence.*—Uncommon in Kansas. Occurs chiefly among match makers, chemical works, firecracker manufacturing, phosphate mill workers, brass foundries.
   h. *Control Methods.*—Personal hygiene, exhaust and ventilation of dusts carrying phosphorus. Education concerning the nature of the product. Periodic dental checkups.
8. Methyl Alcohol: This substance years ago was a hazard in cleaning type. Since the advent of industrial toxicology, this substance has been replaced by the naphthas.
   a. *Recognition of the symptoms.*—In concentration of 200 parts per million, the vapors from methyl alcohol induce toxic symptoms notably

headache, vertigo, nausea, vomiting, anorexia, faintness, weakness, blurring of vision. Later syncope and coma, if the concentrations are large over an eight-hour limit which is the standard for measuring concentrations.

b. *Etiological agent.*—Methyl alcohol.

c. *Source of infection.*—Use of methyl alcohol; formerly used in print shops to clean print.

d. *Incubation period.*—Depends upon length of exposure and concentration of the alcohol. Could kill in short time if concentrations were enormous.

e. *Susceptibility.*—Anyone.

f. *Prevalence.*—Rare.

g. *Methods of control.*—Adequate ventilation and exhausts for print setting rooms. Discontinuance of use for safer cleaner.

9. Naphtha Poisoning: The word naphtha used separately refers to benzene.

a. *Recognition of symptoms.*—Headache and vertigo, nausea and vomiting, abdominal pain, irregular respiration, pneumonia, drowsiness, irritation of skin and mucous membranes, visual disturbances, twitching of the muscles.

b. *Etiological agent.*—Naphtha—gasoline.

c. *Source of infection.*—Wherever naphtha gasoline is manufactured or used.

d. *Mode of transmission.*—Inhalation.

e. *Incubation period.*—Depends upon amount and duration of inhalation of the fumes.

f. *Susceptibility.*—Anybody.

g. *Prevalence.*—Not uncommon, but not severe.

h. *Methods of control.*—Proper ventilation and exhaust.

10. Carbon Bisulphide Poisoning: Used a great deal in the viscose rayon industry in the Eastern part of the U. S. A.

a. *Recognition of symptoms.*—Cardinal symptoms: Cardinal symptom is a slow declination in the blood pressure. Headache, vertigo, weakness, disturbances of sight, polyneuritis, digestive disturbances.

b. *Etiological agent.*—Carbon bisulphide.

c. *Source of infection.*—In those operations entailing the use of carbon bisulphide. This occurs in viscose production, and rubber goods manufacturing chiefly.

d. *Mode of transmission.*—Inhalation.

e. *Incubation period.*—Depends on concentration and duration of exposure.

f. *Susceptibility.*—Anybody.

g. *Prevalence.*—Rare in Kansas.

h. *Methods of control.*—Proper exhaust and ventilation.

11. Dinitrobenzene Poisoning:

a. *Recognition of symptoms.*—Cyanotic face and lips, somnolence, headache, vertigo, nausea and vomiting, odor of bitter almonds in breath, unsteady gait, tremors, muscular twitching and other manifestations of nerve injury, anemia, visual disturbances, methemoglobin formation, presence of hematoporphyrin, albumin, and sometimes free poison in

urine, eczematous eruptions. Incidentally dinitrobenzene is a product made from the nitration of benzene which is the correct name for benzol.

b. *Etiological agent.*—Dinitrobenzene.
c. *Source of infection.*—Inhalation of the product.
d. *Mode of transmission.*—None.
e. *Incubation period.*—Varies as to concentration and duration of exposure.
f. Susceptibility.—Anybody.
g. *Prevalence.*—Uncommon in Kansas.
h. *Control methods.*—Proper exhausting and ventilation.

12. Caisson Disease: Found in Kansas in the installations of bridge pylons and underground excavations, in which compressed air is used to prevent fill-ins and collapse of structure.
   a. *Recognition of symptoms.*—The bends is the typical symptom of the disease, manifested by pain in joints and muscles, due to the release and slow absorption of nitrogen bubbles in the blood stream.
   b. *Etiological agent.*—Nitrogen gas in the blood.
   c. *Source of infection.*—Occurs under increases or decreases of pressures from normal.
   d. *Mode of transmission.*—None.
   e. *Incubation period.*—Depends on the return to normal atmospheric pressures from the abnormal.
   f. *Susceptibility.*—Those who seek employment in that type of occupation involving changeable atmospheric pressures.
   g. *Prevalence.*—Uncommon in Kansas.
   h. *Method of control.*—Slow gradual return to normal atmospheric pressures from the abnormal.

13. Dermatitis (Occupational Dermatoses): This comprises the chief cause of lost time in Kansas industries.
   a. *Recognition of the disease.*—The disease usually manifests itself on the exposed surfaces of the body, but does occur over all parts of the body. It takes the form of papules, pustules, erythema, macules, ulcers, areas of depigmentation and areas of excoriation.
   b. *Etiological agent.*—In Kansas there are approximately 100 different etiological agents which cause industrial dermatoses, but among the more common are Butyl Cellosolve, glue, cutting oils, dopes, tetryl, degreasers, and industrial skin cleansers.
   c. *Source of infection.*—In most cases of dermatitis, direct contact with the irritating element.
   d. *Mode of transmission.*—Usually not transmissible.
   e. *Incubation period.*—Variable from days to months.
   f. *Susceptibility.*—In most cases of dermatitis, usually the females, fair skinned individuals and inexperienced workers are prone to the irritating elements of the occupation.
   g. *Prevalence.*—Dermatitis in industry is the most widespread of any one cause of lost man hours of work and is prevalent in some degree in nearly every industry in the state.
   h. *Methods of control.*—Patch testing to determine the irritating sub-

stance. Protective clothing, ointments, creams, engineering control, plant sanitation, personal hygiene and education.

14. Chlorinated Hydrocarbons Poisoning: This group is important, and was responsible, in one instance, for sending about 40 people to the hospital. In the group, trichlorethylene and carbon tetrachloride are the chief offenders.
    a. *Recognition of the disease.*—The chlorinated hydrocarbons exhibit the following symptoms: Irritation of nose, eyes, and throat, headache, visual disturbances, vertigo, nausea and vomiting, diarrhea, loss of appetite, mental dullness, confusion and excitement, nervousness, injury to liver, jaundice, nephritis, dermatitis, and narcosis.
    b. *Etiological agent.*—Chlorinated hydrocarbons.
    c. *Source of infection.*—In most cases, in degreasing operations and dry cleaning.
    d. *Mode of transmission.*—Not transmitted, acquired by inhalation, ingestion and direct contact.
    e. *Incubation period.*—Variable, depending on concentration of toxic agent and length of exposure. In high concentrations may kill within period of minutes, but usually is a period of weeks.
    f. *Susceptibility.*—Anyone is susceptible to these agents in equal proportions.
    g. *Prevalence.*—In Kansas this disease occurs chiefly in airplane factories and dry cleaning establishments.
    h. *Methods of control.*—Ventilation, slot exhaust, elevated pits, proper operation, personal hygiene, airline respirators.
15. Silicosis: This condition predisposes to silicosis and is found chiefly in the lead and zinc mines of southeastern Kansas and in sand blasting operations and foundries using silicated sand.
    a. *Recognition of the disease.*—Positive in earlier stages by x-ray. Later symptoms of dyspnoea, cough, loss of appetite, loss of weight, shortness of breath.
    b. *Etiological agent.*—Silica (quartz).
    c. *Source of infection.*—Inhalation of dusts containing silica.
    d. *Mode of transmission.*—None. However, since tuberculosis seems to be a residual of silicosis, the methods of disseminating tuberculosis would serve here.
    e. *Incubation period.*—Variable in number of years.
    f. *Susceptibility.*—Equal susceptibility.
    g. *Prevalence.*—Widespread in lead and zinc mines.
    h. *Methods of control.*—Proper ventilation of mines. Wet drilling operations. Wet mucking operations. No blasting on shift. Periodic x-ray. Airline respirators or plain respirators.
16. Welding Fumes (Oxides of Nitrogen): Metal fume fever.
    a. *Recognition of disease.*—Irritation of the mucous membranes of nose and throat, eye irritation, cough, chills, anorexia and lassitude.
    b. *Etiological agent.*—Depends, of course, on the nature of the welding operation. (Steel, brass, zinc.) Inhalation of these fumes.
    c. *Source of infection.*—Inhalation of fumes at site of operation.
    d. *Mode of transmission.*—None.

e. *Incubation period.*—Depends upon concentration of fumes in air breathed. May be minutes to hours.
f. *Susceptibility.*—All welding operators are susceptible.
g. *Prevalence.*—Quite prevalent in a mild degree.
h. *Methods of control.*—Proper exhausting of fumes at site of welding. Air line respirators.

17. Plating Operations. (Cadmium, Zinc, Copper, Chrome.)
a. *Recognition of disease.*—Irritation of nose and throat. Vertigo, headache, weakness, dermatitis, loss of appetite, ulcerations of nasal passages, and skin.
b. *Etiological agent.*—Cyanides of zinc, copper and cadmium. Chromates from chromium.
c. *Source of infection.*—Contact with and inhalation of cyanides. Contact with plating solution, inhalation of chromic acid mists.
d. *Mode of transmission.*—None.
e. *Susceptibility.*—Equal.
f. *Incubation period.*—Depends on cencentration in atmosphere of toxic agents. Variable from minutes to days.
g. *Prevalence.*—Not widespread, fortunately, but ever present. A potentially dangerous condition.
h. *Methods of control.*—Exhaust ventilation. Protective clothing, personal hygiene and education concerning nature of these toxic substances.

Chapter XII

OTHER REPORTABLE DISEASES

The following diseases are declared to be dangerous to the public health and are reportable to the Kansas State Board of Health.

Botulism

1. *Recognition of the disease.*—A disease of intoxication, the symptoms of which develop suddenly with gastrointestinal pain, diarrhea or constipation, prostration, and a variety of central nervous system paralysis, the first of which is likely to be an oculo-motor paralysis, all due to the toxin of the particular saprophytic organism. Biological and toxicological tests with laboratory animals may cofirm presence of toxin of the botulinus bacillus in the food.
2. *Etiological agent.*—The toxin produced by the botulinus bacillus (Clostridium botulinum, C. parabotulinum) in foods improperly processed.
3. *Source.*—Food usually taken uncooked from cans or jars not subjected to adequate heat of sufficient duration or under sufficient pressure during the processing.
4. *Mode of transmission.*—Only by eating food containing the botulinus toxin.
5. *Incubation period.*—Symptoms appear almost always within 24 hours after taking the particular food product, possibly longer, the interval being determined by the amount of the poisoned food taken and its botulinus toxin content.
6. *Communicability.*—This term does not apply. The disease is not conveyed from man to man, or among animals or men, except as food containing the botulinus toxin is consumed by them.
7. *Susceptibility and immunity.*—Susceptibility is general. The symptoms develop according to the amount of toxin ingested in relation to body weight of the person. Antitoxins conferring passive immunity are of use only after infection is known to have occurred.
8. *Prevalence.*—Sporadic cases and groups of cases occur in all countries and always in relation to some perishable food product which has been so kept or preserved as to permit the development, under partially anerobic conditions, of Clostridium botulinum, to the extent of forming the toxin that causes the symptoms. In the United States the disease has in recent years followed most commonly the use, without further or adequate cooking, of home-canned vegetables and meat products.
9. *Methods of control:*
    1. Governmental control by regulation and inspection of commercial processing of canned and preserved foods.
    2. Education of housewives and others concerned with home canning of foods in the essentials of safe processing, as to time, pressure, and temperature factors.

3. Education in value of boiling with a small amount of soda, home-canned green and leafy vegetables before serving, and the thorough cooking of sausage and other meats and fish products held for later consumption.

Cancer (Carcinoma)

1. *Recognition of the disease.*—Early signs of cancer are: (1) Any sore that does not heal, particularly about the tongue, mouth, or lips; (2) persistent hoarseness that lasts longer than two weeks; (3) any persistent lump or thickening, especially in the breast; (4) persistent indigestion developing suddenly in middle life, and often accompanied by loss of weight; (5) any irregular bleeding or discharge from any body opening; (6) sudden changes in the form or rate of growth of a mole or wart; (7) persistent change from the normal habit or action of bowels. Cancer is a malignant tumor, a wild growth of cells which usually grows rapidly, destroying normal structure, *i.e.,* tissues, skin, flesh, bones, or organs. The disease may occur any place in the body, but the most common sites are: females, in the breast and uterus; in males—the skin. Untreated cancer is always fatal. Anemia may indicate cancer, and laboratory test of the abnormal tissue enables accurate diagnosis. Course of the disease is usually rapid, although some of the several types progress more slowly. Diagnosis of cancer always constitutes an emergency.
2. *Etiological agent.*—Begins as a single abnormal cell, or groups of cells, which multiply and spread to adjacent tissues or may be carried by blood and lymph flow to various parts of the body.
3. *Source.*—The source of cancer is not clearly understood, but it is agreed that two factors usually present are: (1) hereditary susceptibility, and (2) long-continued, chronic irritation or inflammation. (The irritation or inflammation may not be evident to the patient.)
4. *Mode of transmission.*—Not communicable.
5. *Incubation period.*—Term does not apply.
6. *Period of communicability.*—Term does not apply.
7. *Susceptibility and immunity.*—Terms do not apply.
8. *Prevalence.*—Cancer causes more deaths in Kansas and in the United States than any other disease except heart disease. It is estimated that approximately 145,000 persons die of cancer each year in the nation. The annual death toll in Kansas is usually slightly more than two thousand. Reporting, although required by state law, is inadequate, failing to present a true picture of the inroads of this disease in our population. Cancer occurs with nearly equal frequency in males and females, with slightly fewer cases in males. Persons of middle and advanced age are the chief victims, although cases do occur in young adults and in children. Cancer has been known since ancient times, and is not limited to man—it is found in all animal life.
9. *Methods of control:*
   A. House not placarded.
   B. General:

1. Education, through information service for physicians, patients, schools, and the public—stressing:
   a. Knowledge of early signs.
   b. Importance of annual physical examination.
   c. Fact that only x-ray, radium, or surgery or a combination of these, can cure cancer.
   d. That only early cases can be cured.
   e. That 75 to 95 percent of the most common types of cancer can be cured if treated early.
2. Clinic, laboratory, and hospital service.
3. Therapy—x-ray, radium, surgery, singly or in combination.
4. Prevention by removal of irritating factors.

Food Infections and Poisonings

1. *Recognition of the disease.*—Acute onset, usually with nausea and abdominal pain or distress, with vomiting and diarrhea, prostration, headache and sometimes fever. Examination of vomitus and feces may reveal the infecting micro-organism, or the poisonous substance.
2. *Etiological agent.*—A variety of organisms, oftenest of the enteriditis or salmonella, or staphylococcus groups. A variety of organic and inorganic poisons.
3. *Source of infection.*—Food recently ingested.
4. *Mode of transmission.*—In the case of bacterial poisonings, by the transfer of the particular etiological agent by food handlers to the food ingested. Hands unwashed after use of toilet, or hands or arms with furuncles, boils, or other sores are usual means of conveyance of contamination to foods. Food may be contaminated with a rodent strain of the salmonella group by rats or mice. The flesh of some food animals infected with certain salmonella strains may cause severe symptoms. Ingestion of foods to which some poisonous substance was accidentally or intentionally added, or in which a natural but poisonous substance occurs, is a direct cause of food poisoning.
5. *Incubation period.*—In the case of bacterial infections, may be from a few to 48 hours after ingestion of food. The symptoms may develop almost immediately, or several hours after ingestion of bacterial or nonbacterial poisons in the food.
6. *Period of communicability.*—This term does not apply to these conditions.
7. *Susceptibility and immunity.*—These do not apply.
8. *Prevalence.*—Sporadic, but in the main of rather common occurrence, especially in persons taking meals away from home, and in public eating places.
9. *Methods of control:*
   1. All group outbreaks of infections and poisonings attributed to foods should be at once reported to the department of health.
   2. Specimens of the foods suspected should be secured and used for laboratory examination.

3. The vomitus and feces of patients should be collected for bacteriological and chemical examination.
4. Persons concerned with the preparations and serving of foods should be brought under observation for medical and bacteriological examination to determine the possible origin, whether from bowel discharges or infections of the skin.
5. Epidemiological inquiries, should include particular study of water and milk used by the persons affected.

Isolation, quarantine, concurrent and terminal disinfection are not applicable in such cases.

Pellagra

1. *Recognition of the disease.*—Pellagra is a general disease brought about by a deficiency of a protective or preventive substance or substances in the diet. Pellagra is characterized by symmetrical erythmatous dermatoses on the exposed parts of the head, neck, and extremities, appearing commonly as the spring and summer advance, by gastrointestinal disorders, by glossitis, stomatitis and in the advanced stages by emaciation, lethargy, mental confusion, and detorioration.
2. *Etiology.*—The cause is the lack of nicotinic acid or closely related compounds in the diet over a prolongd period of months or years.
3. *Transmission.*—Not communicable.
4. *Incubation period.*—Term does not apply. The symptoms rarely appear within 3 months after use of a controlled and artificially deficient diet in man. History of deficient diet in human cases is usually one of months or years.
5. *Period of communicability.*—Term does not apply.
6. *Susceptibility and immunity.*—Susceptibility is general. There is no immunity.
7. *Prevalence.*—The disease is endemic where chronic poverty, ignorance in food uses, and unavailability of the pellagra-preventive foods prevail. Individual cases and institutional cases can be traced to a particular restriction by choice or necessity in the pellagra-preventive elements of the diet. In the southern States where diets are often seriously deficient in many respects, the incidence of the disease varies with the economic status of individuals and communities.
8. *Methods of control:*
    1. Education in the use of pellagra-preventive articles of diet, particularly liver, lean meats, leafy green vegetables, and milk.
    2. Provision of dried brewer's yeast containing specific pellagra-preventive substance, to be distributed by the health or other public authority among persons economically unable to provide pellagra-preventive substance by usual table food.
    3. Specific therapy: Nicotinic acid and its nicotinamide are specific.

Chapter XIII

VENEREAL DISEASES—ADDITIONAL RULES AND REGULATIONS

11,110. Spyhilis, Gonorrhea, Chancroid, Granuloma Inguinale, Lympho Granuloma Venereum, or any venereal disease. Every person who knows or suspects that he or she may be infected with syphilis, gonococcus infection, chancroid, or any venereal disease, shall forthwith place himself or herself under the care and treatment of a legally qualified practitioner of medicine, or shall report to the local or state health officer for examination to determine whether or not such infection exists.

11,111. Reporting cases of venereal disease. Hereafter, each and every physician or other practitioner of the healing art practicing in the state of Kansas, or any other person who treats or examines any person suffering from or afflicted with syphilis, gonococcus infection, chancroid, or any venereal disease in any of their states or manifestations, shall report as hereinafter required, in writing to the State Board of Health the existence of such disease: *Provided,* That in cities where ordinances have been adopted which require the reporting of syphilis, gonococcus infection or other venereal disease to the local health officers or boards of health, said local health officers or boards of health shall, within seven (7) days after the receipt by them of the reports of cases of the diseases herein named, forward by mail to the State Board of Health the original written reports made by persons required to make such reports, after first having transcribed the information given in the respective reports in a book or other form of records for the permanent files of the local health office. Said permanent record or file shall be a confidential record and open to public inspection only in so far as is necessary for the protection of the public health and the enforcement of the provisions of state laws, the regulations of the State Board of Health and of local city ordinances.

11,112. Reports written within forty-eight hours. All such reports shall be made in writing within forty-eight hours after diagnosis. The report form shall contain space for recording such information as the Board may deem necessary to assist in the control of the disease and to protect the public health, on blank forms supplied or approved by the State Board of Health: *Provided,* That whenever the physician making a report will assume full responsibility for such conduct of the person afflicted with any of these diseases as will prevent the transmission of infection to others, and except in cities where local ordinances otherwise require, nothing in this paragraph shall be construed to require the reporting of the name and address of a person afflicted with syphilis, gonococcus infection or chancroid as aforesaid, unless such person shall fail to report for treatment at the time appointed or for seven (7) days thereafter. In the event that the person making a report is unwilling to assume such responsibility or shall know or suspect that a person having syphilis, gonococcus infection or chancroid is conducting or about to conduct himself or herself in

such manner as to expose other persons to such infection, he shall then report the name and address of such afflicted person, together with such other essential facts as may be required by the State Board of Health.

11,113. Venereal disease patients may apply to State Board of Health for information. Any person under treatment for venereal disease who may suspect an incorrect diagnosis or an undue prolongation of treatment or who may be threatened that his identity will be revealed if he discontinues treatment, may apply to the State Board of Health for information and advice.

11,114. Physician should give venereal disease patient circulars sent out by Board of Health. It shall be the duty of each and every physician or other practitioner of the healing art practicing in the state of Kansas, or any other person who visits, attends, advises professionally, prescribes for or renders medical or surgical assistance to, or is consulted for medical advice by any person having syphilis, gonococcus infection or chancroid, as aforesaid, to at once give to such person a circular of instructions furnished or approved by the State Board of Health. This circular of instructions shall contain information concerning the prevention or transmission of veneral diseases.

11,115. Reports of the druggist of venereal disease remedies. In any city where druggists are required by ordinance to report sales of veneral disease remedies to the local health officer, such local health officer shall transmit such reports to the State Board of Health after having made a record of the same in the same manner as reports of cases by physicians are recorded and transmitted.

11,333. Public baths and barber shops. No person infected with syphilis, gonococcus infection, chancroid or any veneral disease in communicable form, shall apply for service, be served or employed in a public bath room or swimming pool in the state, and no person suffering from syphilis in a communicable form shall apply for service or be served in any barber shop, nor shall any person suffering from syphilis in communicable form, gonococcus infection or chancroid be employed or permitted to perform any service in any barber shop.

I. *Occupations forbidden to persons infected with syphilis, gonococcus infection, chancroid or any venereal disease in communicable form.* No person infected with syphilis in communicable form shall engage in the occupation of nurse, nurse-maid, domestic servant, barber, hair-dresser, chiropodist, manicurist, bath attendant, masseur, or any other occupation in which syphilitic infection may be transmitted to others. No person infected with syphilis in communicable form or gonococcus infection shall engage in any occupation which involves intimate contact with children. No person infected with syphilis in communicable form, gonococcus infection or chancroid shall engage in any occupation which involves the preparation, handling, serving or dispensing by the infected person of foods, drugs or beverages intended for the use of others.

11,335. Travel or change of residence by persons infected with syphilis, gonococcus infection, chancroid, or any communicable venereal disease, prohibited unless authorized by health officer. No person infected with syphilis in communicable form, gonococcus infection or chancroid shall enter the state of Kansas or take up residence within the state except upon a permit in writing issued by the secretary of the State Board of Health or his duly

authorized representative. The permit shall state that, in the opinion of the issuing officer, the proposed travel or change of residence is not dangerous to the public health. Such permits granted to residents of other states shall be transmitted through the state or local health officer having jurisdiction at the place of residence, or when this is impracticable, copies shall be mailed to the said state or local health officer.

I. No person infected with syphilis, gonococcus infection, chancroid or any venereal disease in communicable form, shall travel from one health jurisdiction to another within the state, or from one community to another within the same health jurisdiction except upon a permit in writing granted by the local health officer under whose jurisdiction such person resides. The permit shall state that, in the opinion of the health officer, the proposed travel is not dangerous to public health.

II. No person infected with syphilis, gonococcus infection, chancroid or any venereal disease in communicable form, shall change residence from one health jurisdiction to another within the state or from one community to another within the same local health jurisdiction except upon a permit in writing from the local health officer of the jurisdiction from which such person proposes to move. An applicant for a permit to change residence from one health jurisdiction to another shall inform the health officer to whom application is made as to the intended place of residence, and shall agree in writing to report in person to the proper health officer within one week after arrival at the new place of residence. It shall be the duty of the health officer who issues a permit for change of residence to another jurisdiction to promptly notify the health officer under whose jurisdiction the infected person proposes to enter, that such a permit has been issued. This notice shall contain the name and address of the infected person. Upon receiving such notice any health officer shall ascertain and report the arrival of such infected person to the health officer who issued the permit for change of residence, and shall also notify the State Board of Health that such change of residence has taken place.

III. Each application for a permit to travel or change residence must contain an agreement signed by the applicant to continue treatment under the direction of a legally licensed physician until permission to discontinue treatment has been received from the health officer. No health officer shall permit the discontinuance of treatment under such conditions until the infected person has become noninfectious according to the standards fixed by the State Board of Health.

11,337. Rules and regulations for the control and suppression of syphilis, gonococcus infection and chancroid. Section 1. Local county and city health officers throughout the state and deputy state health officers appointed for that purpose are hereby authorized and directed to use every available means to ascertain the existence of and immediately investigate all suspected cases of syphilis in communicable form, gonococcus infection or chancroid within their respective jurisdictions, and to ascertain the source of such infections.

Section 2. In such investigations said local health officers, deputy state health officers, or their duly authorized representatives, are hereby vested with full powers of inspection, examination, isolation, and disinfection of all places, persons and things, and as such inspectors, said local health officers, deputy state health officers or their duly authorized representatives, are herby authorized:

I. To make examinations of all persons reasonably suspected of having syphilis in communicable form, gonococcus infection or chancroid. Owing to the prevalence of such disease among pimps and prostitutes, all such persons may be considered in the above class.

II. To isolate such person whenever in the opinion of said local health officer, deputy state health officer, the State Board of Health or its secretary, isolation is necessary to protect the public health. In establishing isolation the health officer shall define the place and the limits of the area in which the person reasonably suspected or known to have syphilis, gonococcus infection or chancroid, and his or her attendant, are to be isolated, and no persons, other than the attending physicians, shall enter or leave the area of isolation without the permission of the health officer having jurisdiction: *Provided,* That women may be quarantined at the Kansas State Quarantine Hospital for Women at Lansing: *Provided further,* That in any case where quarantine for venereal disease is contemplated or ordered after an examination or examinations by the health officer, the infected persons may appeal to the local board of health in writing for another examination or examinations to confirm the diagnosis. The local board of health may require the persons making such appeal to pay the cost thereof, and to deposit with the written appeal a sum not exceeding $10.00 for that purpose. Upon receipt of such written appeal, accompanied by the required fee to cover the cost of such examination, the local board of health shall appoint another physician to consult with and assist the health officer in making such additional examination or examinations as may be necessary to reach an agreement as to diagnosis. The local board of health may waive the following fee of ten dollars if, in their discretion, the appellant is unable to pay the same. Specimens for laboratory tests taken in the additional examination or examinations shall be sent to the state laboratory. Infants or little girls requiring a mother's attention should not be sent to the Lansing Quarantine Home.

III. In cases of quarantine or isolation not to terminate said quarantine or isolation until the cases have become noninfectious, or until permission has been given by the health officer having jurisdiction: *Provided,* That power to release from quarantine at the Kansas State Quarantine Hospital for Women shall be vested in a deputy state health officer to be designated by the secretary of the State Board of Health.

Cases of gonococcus infection must be regarded as infectious until at least three successive smears taken not less than five (5) days apart fail to show gonococci. Smears taken for examination for release shall not be taken for at least forty-eight (48) hours following last local treatment, nor immediately following urination. Specimens for smear examination must be taken by an approved technique.

Cases of syphilis must be regarded as infectious until all lesions of skin or mucous membranes are completely healed.

Pregnant women with syphilis are to be considered infectious to their unborn child and attendants at confinement and during puerperium regardless of the stage of their disease or the presence of lesions.

In addition to the above criteria for infectiousness, the health officer or his duly authorized representatives may declare a case of either syphilis or gonorrhea dangerous to the public health because of other clinical or laboratory

evidence not mentioned above. Such evidence must be of the type ordinarily accepted by the medical professions as indication of a possible infectiousness of a case in spite of the fact that the above criteria are negative. For example: All smears taken over a period of time from a person suspected of having gonorrhea may be negative, while cultures might reveal presence of the gonococcus and, therefore, infectiousness. Also, pregnant women with syphilis who have no lesions of skin or mucous membrane, may be infectious.

IV. Inasmuch as prostitution is the most prolific source of syphilis, gonococcus infection and chancroid, said local health officers and their duly authorized representatives are authorized and directed to use every proper means to aid in suppressing the same, and not to issue certificates or any written evidence purporting to show or indicate that the individual is free from venereal diseases which may be used for the purpose of solicitation.

V. Keep all records pertaining to said inspections and examinations in files not open to public inspection, and to make every reasonable effort consistent with the protection of the public health to keep secret the identity of those affected by venereal disease control measures.

Section 3. *Resolved,* By the Kansas State Board of Health at its annual meeting held in Topeka, June 26, 1919, That the procedure outlined in the articles of instruction appended hereto be adopted as the official procedure to be followed by all local health officers of the state when information reaches them concerning the existence of a case of venereal disease, and that all local health officers be and the same are hereby directed to follow this procedure and investigate all information received concerning the existence of cases of venereal disease and take appropriate action in each case to protect the public health.

I. When a duly qualified physician reports a case of venereal disease by number and withholds the name of the patient, it is understood that the physician accepts responsibility for the conduct of the patient, and the health officer should transmit the reports to the State Board of Health. Should information reach the health officer through channels other than the physician's report that the conduct of a patient whose case has been reported by number is such as to expose others to infection, it is the duty of the health officer to take appropriate action to protect the public health, even though such action should require the quarantine of such infected person.

II. When the names and addresses of persons infected with venereal disease are reported by physicians, the procedure adopted should be such as will extend every proper courtesy to the physician making the report, duly respect the confidential nature of the information, and adequately protect the public health. Should the report be made direct to the local health officer, it is advisable to see the physician personally, if practicable, and get all the information possible as to the character of such infected person and the likelihood that the patient's conduct may be such as might spread the disease to others.

III. After a talk with the attending physician, if an interview with the patient is deemed necessary, a private interview should be sought at the earliest opportunity. The purpose of the interview should be disclosed to no one except the patient. The provisions of the state regulations and local ordinance, if any has been passed, should be carefully explained so that the patient may

fully appreciate the powers which the health officer may exercise under such regulations. It is probable that a plain talk of this kind, in which the patient is given to understand that he must follow instructions or he may be placed under quarantine by the health officer, will be sufficient to deter him from exposing others. If not, in order to protect the public health, it is the duty of the health officer to institute quarantine without delay.

IV. When the persons whose names are reported are known to be prostitutes or pimps, or to be engaged in any way in commercialized vice, it may be assumed that such persons cannot be trusted to protect others from exposure to infection, and it is the duty of the health officer to take immediate steps to quarantine them without waiting to interview either the physician or the patient. In all other cases where quarantine is instituted, the health officer will wish to satisfy himself as to the accuracy of the diagnosis.

V. Before deciding to quarantine a person infected with venereal disease, the health officer should study the fact in the case to determine the best methods of handling the individual case. It is not desired to place the expense of maintaining and treating such persons for considerable period upon the public unless such step is necessary to protect the public health. On the other hand, it is highly desirable that every person infected with venereal disease who is a menace to the public health while at liberty, should be placed in quarantine.

VI. The health officer should examine promptly and thoroughly by both clinical and laboratory methods, all persons referred by peace officers as suspected of having venereal disease, and take appropriate action to protect the public health in all cases found to be infected.

VII. An official inquiry concerning all persons reported by druggists as having purchased drugs for the treatment of venereal diseases should be promptly made by the health officer or his representative, to determine if the reported person is conducting himself or herself in a manner prejudicial to the public health. Measures for the treatment or quarantine of such individuals should be conditioned upon the results of such inquiry. In no case should the health officer himself treat such person for pay, as this will cause his motives to be suspected.

VIII. In many instances such persons may submit to an examination by the health officer or other physician under whose professional care they may choose to place themselves without the necessity for having them apprehended by peace officers. Such procedure is preferable where practicable, as it is less likely to attract attention and result in publicity.

IX. When there is a reason to believe that a person is a menace to the public health such persons may be apprehended by a peace officer upon an order issued by a health officer. Such an order constitutes the authority of the peace officer for detaining the suspected person until the medical examination has been completed.

X. All reports of venereal disease are required to be confidential, and all administrative measures for the control of venereal disease should be carried out with as little publicity as possible. Publicity may be most embarrassing to innocent members of the family.

XI. Information concerning the presence of venereal disease may often reach the health officer through channels other than official. Private citizens or representatives of certain societies or civic organizations may report cases,

and it is the duty of the health officer to carefully investigate all cases so reported. Should the investigation furnish evidence of infection that seems sufficient, the health officer should either persuade the suspected person to submit to an examination or issue a "pick-up-order" to be served by a peace officer. All cases should be dealt with in a manner that will best safeguard the public health.

XII. When persons who have previously been quarantined for venereal disease become reinfected, it is advisable to have them sent to Lansing under court sentence if the evidence will warrant such procedure, as the period of detention is apt to be longer under court sentence than under quarantine. It is the duty of all health officers to coöperate fully with the courts and with peace officers in the repression of prostitution, which is recognized as the most prolific source of venereal disease.

XIII. It is sometimes necessary to deal with young girls who are infected with venereal disease. These cases are often such as need training in the Girls' Industrial School at Beloit. If girls are under detention only for quarantine because of venereal disease, they may be sent to Lansing. If, however, they are sentenced to Beloit by the Probate Court in the usual manner for cause or causes other than venereal disease, and if they also have venereal disease, they will be accepted at Beloit. Facilities for quarantine and treatment are available at Beloit for girls sentenced to that institution. Girls should, however, not be sentenced to Beloit for quarantine alone.

11,339. Venereal disease patients to be excluded from schools. No person afflicted with a venereal disease (gonorrhea, syphilis, or chancroid) in an infectious stage shall be permitted to attend, teach, or be otherwise employed in any private, parochial or public school.

Chapter XIV

TUBERCULOSIS—ADDITIONAL LAWS, RULES, AND REGULATIONS

3,202—65-105. Report of tuberculosis patients by physicians, hospitals and others. Tuberculosis is hereby declared to be an infectious and communicable disease, dangerous to the public health. It shall be the duty of every physician in the state of Kansas to report in writing, on a form to be furnished as hereinafter provided, the name, age, sex, color, occupation, place where last employed, if known, and address of every person known by said physician to have tuberculosis, to the county health officer, or in cities of the first class to the city health officer, in which said person resides, within twenty-four hours after such fact comes to the knowledge of said physician. It shall also be the duty of the chief officer having charge for the time being of any hospital, dispensary, asylum, or other similar private or public institution in said state of Kansas, to report in like manner the name, age, sex, color, occupation, place where last employed, if known, and previous address of every patient having tuberculosis who comes into his care or under his observation within twenty-four hours thereafter. (L. 1909, ch. 227, p. p. 1; March 2; R. S. 1923, p. p. 65-105.)

3,203—65-106. Microscopical examination of sputum; report by state bacteriologist. It shall be the duty of the bacteriologist of the laboratory of the state board of health, when so requested by any physician or by authorities of any hospital or dispensary, to make, or cause to be made, a microscopical examination of the sputum forwarded to said bacteriologist as that of a person having symptoms of tuberculosis, which shall be forwarded to such officer, accompanied by a blank giving name, age, sex, color, occupation, place where last employed, if known, and address of the person whose sputum it is. It shall be the duty of said bacteriologist promptly to make a report of the results of such examination, free of charge, to the physician or person upon whose application the same is made. (L. 1909, ch. 227, p. p. 2; March 2; R. S. 1923, p. p. 65-106.)

3,204—65-107. Tuberculosis register by local health officers. It shall be the duty of every health officer of a city or county to cause all reports made in accordance with the provisions of the first (65-105) section of this act, and also all results of examinations showing the presence of the bacilli of tuberculosis, made in accordance with the provisions of the second (65-106) section of this act, to be recorded in a register, of which he shall be the custodian. Such register shall not be open to inspection by any person other than the health authorities of the state and of said city or county, and said health authorities shall not permit any such report or record to be divulged so as to disclose the identity of the person to whom it relates, except as may be necessary to carry into effect the provisions of this act. (L. 1909, ch. 227, p. p. 3; March 2; R. S. 1923, p. p. 65-107.)

3,205—65-108. Notice to health officer after vacation of premises; disinfection before occupation. In case of the vacation of any apartments or

premises by the death or removal therefrom of a person having tuberculosis, it shall be the duty of the attending physician, or if there be no such physician, or if such physician be absent, of the owner, lessee, occupant, or other person having charge of the said apartments or premises, to notify the health officer of said city or county of said death or removal within twenty-four hours thereafter, and such apartments or premises so vacated shall not again be occupied until duly disinfected, cleansed or renovated as hereinafter provided. (L. 1909, ch. 227, p. p. 4; March 2; R. S. 1923, p. p. 65-108.)

3,206—65-109. Same; duty of health officer; notice to owner to cleanse or renovate. When notified of the vacation of any apartments or premises, as provided in section 4 (65-108) hereof, the local health officer, or one of his assistants or deputies, shall within twenty-four hours thereafter visit said apartments or premises, and shall order and direct that, except for purpose of cleansing or disinfection, no infected article shall be removed therefrom until properly and suitably cleansed or disinfected; and said health officer shall determine the manner in which such apartments or premises shall be disinfected, cleansed or renovated in order that they may be rendered safe and suitable for occupancy. If the health authorities determine that disinfection is sufficient to render them safe and suitable for occupancy, such apartments or premises, together with all infected articles therein, shall immediately be disinfected by the health authorities at public expense, or, if the owner prefers, by the owner at his expense, to the satisfaction of the health authorities. Should the health authorities determine that such apartments or premises are in need of thorough cleansing and renovation, a notice in writing to this effect shall be served upon the owner or agent of said apartments or premises, and said owner or agent shall thereupon proceed to the cleansing or renovating of such apartments or premises in accordance with the instruction of the health authorities, and such cleansing and renovation shall be done at the expense of the said owner or agent. (L. 1909, ch. 227, p. p. 5; March 2; R. S. 1923, p. p. 65-109.)

3,207—65-110. Same; placard when premises not disinfected, form. In case the orders or directions of the local health officer requiring the disinfection, cleansing or renovation of any apartments or premises or any articles therein, as hereinbefore provided, shall not be complied with within forty-eight hours after such orders or directions shall be given, the health officer may cause a placard in words and form substantially as follows to be placed upon the door of the infected apartments or premises: "Tuberculosis is a communicable disease. These apartments have been occupied by a consumptive, and may be infected. They must not be occupied until the order of the health officer directing their disinfection or renovation has been complied with. This notice must not be removed, under the penalty of the law, except by the health officer or other duly authorized official." (L. 1909, ch. 227, p. p. 6; March 2; R. S. 1923, p. p. 65-110.)

3,208—65-111. Unlawful acts of tubercular person; penalty. Any person having tuberculosis who shall dispose of his sputum, saliva or other bodily secretion or excretion so as to cause offense or danger to any person or persons occupying the same room or apartment, house, or part of house, shall, on complaint of any person or persons subjected to such offense or danger, be

deemed guilty of an offense, and any persons subjected to such an offense may make complaint in person or writing to the health officer of any city or county where the offense complained of is committed. And it shall be the duty of the local health officer receiving such complaint to investigate, and if it appears that the offense complained of is such as to cause offense or danger to any person occupying the same room, apartment, house, or part of house, he shall serve a notice upon the person so complained of, reciting the alleged cause of offense or danger and requiring him to dispose of his sputum, saliva or other bodily secretion or excretion in such manner as to remove all reasonable cause of offense or danger. Any person failing or refusing to comply with orders or regulations of the local health officer of any city, county or state, requiring him to cease to commit such offense, shall be deemed guilty of a misdemeanor, and on conviction thereof shall be fined not more than ten dollars. (L. 1909, ch. 227, p.p. 7; March 2; R.S. 1923, p.p. 65-111.)

3,209—65-112. Precautions and instructions by attending physician; duty of local health officer, when. It shall be the duty of a physician attending a patient having tuberculosis to take all proper precautions and to give proper instructions to provide for the safety of all individuals occupying the same house or apartment, and if no physician be attending such patient this duty shall devolve upon the local health officer; and all duties imposed upon physicians by any sections of this act shall be performed by the local health officer in all cases of tuberculosis not attended by a physician, or when the physician fails to perform the duties herein specified, and shall so report. (L. 1909, ch. 227, p.p. 8; March 2; R.S. 1923, p.p. 65-112.)

3,210—65-113. Blanks, records, reports, fees and duties of physicians; penalty; duties of local health officers. It shall be the duty of the local health officer to transmit to a physician reporting a case of tuberculosis, as provided in section 1 (65-105) of this act, a printed statement and report, in a form approved by the secretary of the state board of health, naming such procedures and precautions as in the opinion of the said secretary are necessary or desirable to be taken on the premises of a tuberculosis patient. It shall be the duty of the local health authorities to keep on hand an ample supply of such statements and reports and to furnish the same in sufficient numbers to all local physicians. Upon receipt of such statement and report the physician shall either carry into effect all such procedures and precautions as are therein prescribed, and shall thereupon sign and date the same and return it to the local health officer without delay, or if such attending physician be unwilling or unable to carry into effect the procedures and precautions specified, he shall so state upon this report and immediately return the same to the local health officer, and the duties therein prescribed shall thereupon devolve upon said local health officer, who shall receive the fee hereinafter provided as payment of the services of the physician if he comply with the duties herein prescribed. Upon receipt of this statement and report the local health officer shall carefully examine the same, and if satisfied that the attending physician has taken all necessary and desirable precautions to insure the safety of all persons living in the apartments or premises occupied by the person having tuberculosis, the said local health officer shall issue an order upon the treasurer of the city or county in favor of the attending physician for the sum of one dollar, thereupon

to be paid out of the general fund of said city or county. If the precautions taken or instructions given by the attending physician are, in the opinion of the local health officer, not such as will remove all reasonable danger or probability of danger to the persons occupying the said house or apartments or premises, the local health officer shall return to the attending physician the report with a letter specifying the additional precautions or instructions which the health officer shall require him to take or give; and the said attending physician shall immediately take the additional precautions and give the additional instructions specified and shall record and return the same on the original report to the local health officer. It shall further be the duty of the local health officer to transmit to the physician reporting any case of tuberculosis a printed requisition, in a form approved by the secretary of the state board of health. Upon this requisition blank shall be named the materials kept on hand by the local health officer for the prevention of the spread of tuberculosis, and it shall be the duty of the local health officer to supply such materials as may be specified in such requisition. Any physician may return a duly signed requisition to the local health officer for such of the specified materials and in such amount as he may deem necessary to aid him in preventing the spread of the disease, and all local health officers shall honor, as far as possible, a requisition signed by the attending physician in such case. It shall be the duty of every local health officer to transmit to every physician reporting any case of tuberculosis, or to the person reported as suffering from this disease, provided the latter has no attending physician, a circular of information approved by the secretary of the state board of health, and which shall be provided in sufficient quantity by the local health authorities. This circular of information shall inform the consumptive of the best methods of treatment of his disease and of the precautions necessary to avoid transmitting the disease to others. Any physician who shall certify falsely as to any of the precautions taken to prevent the spread of infection shall be deemed guilty of a misdemeanor, and on conviction thereof shall be subject to a fine of not more than fifty dollars. (L. 1909, ch. 227, p. p. 9; March 2; R. S. 1923, p. p. 65-113.)

3,211—65-114. Report of recovery from tuberculosis. Upon the recovery of any person having tuberculosis, it shall be the duty of the attending physician to make a report of this fact to the local health officer, who shall record the same in the records of his office, and shall relieve said person from further liability to any requirements imposed by this act. (L. 1909, ch. 227, p. p. 10; March 2; R. S. 1923, p. p. 65-114.)

3,212—65-115. Copy of reports of tuberculosis for state board. It is hereby made the duty of local health officers to return to the state board of health, on or before the tenth day of each month, a copy of each report of tuberculosis received and recorded by him during the preceding month. (L. 1909, ch. 227, p. p. 11; March 2; R. S. 1923, p. p. 65-115.)

3,213—65-116. Penalty for violating p. p. 65-105 to 65-116. Any person violating any of the provisions of this act shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished, except as herein otherwise provided, by a fine of not less than five dollars nor more than fifty dollars. (L. 1909, ch. 227, p. p. 12; March 2; R. S. 1923, p. p. 65-116.)

11,336—35. Tuberculosis in schools. No child, janitor or teacher suffering from tuberculosis in a communicable form shall be allowed to attend or work in any public, private or parochial school.

I. In the event that any child, janitor or teacher is believed to be suffering from pulmonary or laryngeal tuberculosis, the local health officer upon receipt of information of such belief shall make prompt investigation and satisfy himself either by personal examination or by a written certification from a legally qualified physician of the necessity of the exclusion of such individual from school, and until such examination and certification shall be made the individual shall be excluded from school.

13,311—10. Pulmonary tuberculosis. Common carriers shall not accept for transportation any person known by them to be afflicted with pulmonary tuberculosis in a communicable stage unless said person is provided with (a) sputum cup made of impervious material and so constructed as to admit of being tightly closed when not in use, (b) a sufficient supply of gauze, papers or similar articles of the proper size to cover the mouth and nose while coughing or sneezing, (c) a heavy paper bag or other tight container for receiving the soiled gauze, paper or similar articles; and unless such person shall obligate himself to use the articles provided for in the manner intended, and to destroy said articles by burning or to disinfect them by immersing for at least one hour in a 5 percent solution of carbolic acid or other solution of equivalent disinfecting value; nor shall any person knowing himself to be so afflicted apply for, procure or accept transportation unless he shall have agreed to and made all necessary arrangements for complying and does so comply with the rules as set forth herein.

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